A. INTRODUCTION

This chapter assesses the potential for cultural resources (including architectural and archaeological resources) to be affected by the construction and/or operation of the project alternatives.

B. METHODOLOGY

REGULATORY CONTEXT

The Federal Highway Administration (FHWA) and the Port Authority of New York and New Jersey (PANYNJ) are serving as co-lead agencies for this Tier I EIS. This evaluation of cultural resources has been performed in accordance with Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended; Section 4(f) of the United States Department of Transportation Act of 1966; the New York State Historic Preservation Act of 1980 (SHPA); and the New Jersey Register of Historic Places Act of 1970 (NJSA).

Section 106 of NHPA, as implemented by federal regulations appearing in 36 CFR Part 800, mandates that federal agencies consider the effect of their actions on historic properties, defined as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places." Historic properties include properties listed on the National Register of Historic Places (NR) or the State Register of Historic Places (SR) or determined eligible for such listing. Section 106 of NHPA also includes specific guidelines for the treatment of National Historic Landmarks (NHLs). NHLs are properties of national significance designated by the United States Department of Interior because they possess exceptional historic value. In addition, Section 110 of NHPA mandates additional protection of NHLs by requiring that federal agencies undertake planning and actions as necessary to minimize harm when considering undertakings that may directly and adversely affect NHLs.

Historic properties are also protected by Section 4(f). Section 4(f) prohibits actions by the Secretary of Transportation that require "use" of a historic property that is listed in or eligible for inclusion in the National Register, unless a determination is made that there is no feasible and prudent alternative to the use of such land, and all possible planning has been undertaken to minimize harm to the 4(f) property. See "Section 4(f)" at the end of this chapter for a high level description of potential effects on 4(f) eligible historic properties by the construction or operation of the project alternatives.

SHPA requires that state agencies consider the effect of their actions on properties listed on or determined eligible for listing on the New York State Register of Historic Places. Separate review under SHPA is not required when NHPA applies.

NJSA protects historic properties through their nomination and inclusion on the New Jersey Register of Historic Places. Public undertakings that may encroach upon, damage, or destroy

properties listed on the New Jersey Register of Historic Places must be reviewed by the New Jersey Historic Preservation Office (NJHPO) with final authorization for the project to proceed granted by the Commissioner of the New Jersey Department of Environmental Protection. Undertakings may consist of actions by local, county, and state-level public agencies.

In keeping with these regulations, the analysis of the effects of Cross Harbor Freight Program (CHFP) on cultural resources will be conducted in consultation with the New York State Historic Preservation Office (NYSHPO), NJHPO, the New York City Landmarks Preservation Commission (NYCLPC), and involved Tribal Historic Preservation Officers (THPOs) and/or tribal organizations as part of the Tier II analysis. In addition, as part of the Tier II analysis, potential consulting and interested parties will be identified in coordination with the SHPOs and will be invited to participate in consultation under Section 106.

METHODOLOGY

To assess the potential effects of the project alternatives on cultural resources—and as described in greater detail below—the cultural resources analysis involved several steps. First, an Area of Potential Effect (APE) for architectural resources west-of-Hudson (in New Jersey) and east-of-Hudson (in New York) was delineated to take into account the potential effects that could result from the construction and operation of the project alternatives. Then, data was collected on known architectural resources ("known" resources) within the respective APEs. The project alternatives' potential to affect the identified cultural resources was then assessed. Project effects on architectural resources may include both direct (i.e., physical) and indirect (i.e., contextual) impacts. Direct effects could include physical destruction, demolition, damage, or alteration of a historic resource. Since this Tier I EIS does not include conceptual design of the alternatives but only a high-level determination of modes, alignments, and termini for the viable alternatives, a determination of effects and identification of detailed measures to avoid potential adverse effects is not possible at this time. Similarly, because a conceptual design for the Build Alternatives is not available to help determine precise areas of ground disturbance, an APE for archaeological resources could not be determined. Instead, this chapter discusses the results of previous archaeological investigations in the vicinity of facilities associated with the Build Alternatives and discusses the need for further investigations under any Tier II analysis.

This analysis considers a No Action Alternative, as well as five Waterborne Alternatives and five Rail Tunnel Alternatives. The No Action Alternative includes the rail, highway, and port infrastructure projects currently planned by the various regional and local transportation agencies. The No Action Alternative includes undertakings that are part of the overall CHFP, i.e., planned improvements to Greenville Yard and 65th Street Yard. A separate set of environmental review processes have previously been completed for these improvements, with separate documentation approved by FHWA[1] and the improvements will be completed before the Build year for the alternatives described in this EIS. It is also assumed that the planned regional transportation projects included in the No Action Alternative would be approved through separate environmental review documentation. Therefore, the No Action Alternative does not require a cultural resources effects analysis in this EIS.

[1] *Categorical Exclusion Documentation and Final Section 4(f) Evaluation, for the Acquisition and Replacement of Greenville Yard Lift Bridge* (March 2011), and the subsequent *Greenville and 65th Street Yards Categorical Exclusion Re-evaluation Statement*

As described in Chapter 4, "Alternatives," all of the Build Alternatives would require modifications to existing rail lines, such as increases in clearance heights, and expansion of existing freight handling facilities. In addition, the Waterborne Alternatives would require other types of construction, including renovation of existing float bridges, and the construction of new float bridges, ramps, and landing piers. All of the Rail Tunnel Alternatives would require the construction of a tunnel under New York Harbor and associated structures (i.e., tunnel portals and ventilation structures). Many of the Rail Tunnel Alternatives would also require the construction of specialized terminals (e.g., for Automated Guided Vehicle [AGV] operations). Any of the Build Alternatives requiring new construction may have the potential to directly or indirectly affect cultural resources.

AREAS OF POTENTIAL EFFECT

As noted previously, for the purposes of this Tier I EIS, only the APEs for architectural resources have been identified and delineated. Since Tier I of the project does not include engineering and design beyond a high level definition of viable alternatives, the APEs may be modified as part of any future Tier II analysis through consultation with NJHPO, NYSHPO, NYCLPC, tribal organizations, and Section 106 Consulting Parties.

Architectural Resources APE

In general, potential effects on architectural resources can include both direct physical impacts—demolition, alteration, or damage from construction on nearby sites—and indirect, contextual impacts, such as the isolation of a property from its surrounding environment, or the introduction of visual, audible, or atmospheric elements that are out of character with a property or that alter its setting. In addition, Section 106 requires consideration of reasonably foreseeable effects that may occur later in time, be further removed in distance, or be cumulative.

As mentioned previously, a broad APE has been delineated to take into account the potential for direct and indirect effects to result from a wide variety of possible design scenarios. **Figures 6.3-1** through **6.3-7** depict the architectural APE and the location of known architectural resources.

- For the portions of rail lines where new construction and/or operation of a substantial number of additional trains would occur, the APE extends 500 feet from the rail centerline. This APE was chosen to account for potential construction impacts and potential visual and contextual impacts resulting from project construction and/or operation. The APE of 500 feet also encompasses some of the more potentially visible project components, including at-grade and elevated sections of the rail line where traffic would be substantially increased, and ventilation structures.
- An APE of 1,000 feet has been delineated around existing freight facilities. This APE was chosen to account for the potential expansion of some facilities.

Potential Archaeological Resources APE

Project elements involving in-ground disturbance have the potential to affect archaeological resources through construction activities, such as excavation and grading. Locations where new tunnels would be constructed far below ground via tunnel boring machines would be excluded from any future APE because the construction would be too deep to impact archaeological resources. While archaeological APEs will not be delineated in this Tier I EIS, this chapter discusses the results of previous studies conducted in the vicinity of the project's facilities in order to assess the potential for the presence of archaeological resources for future study.

5.13.14

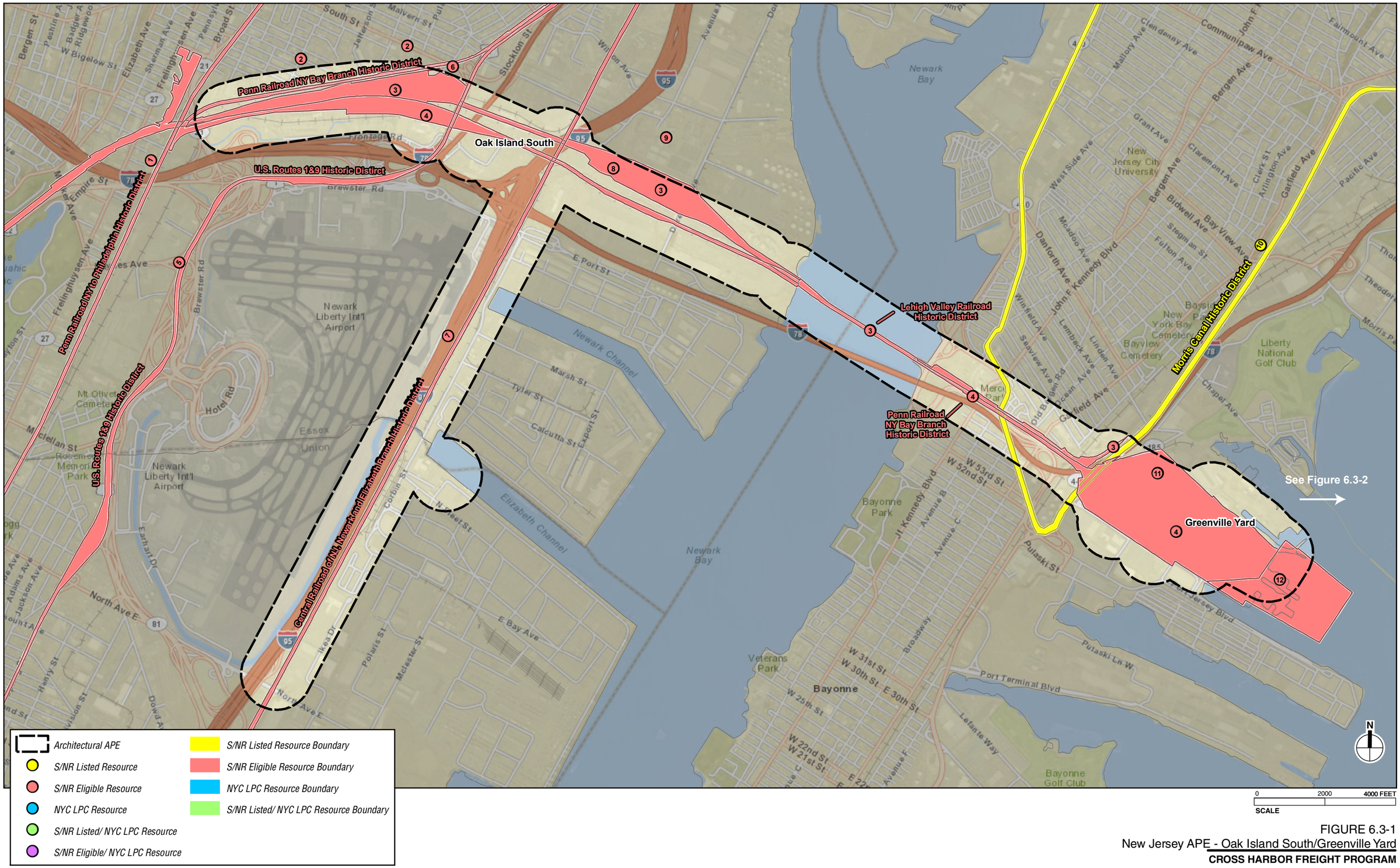

FIGURE 6.3-1
New Jersey APE - Oak Island South/Greenville Yard
CROSS HARBOR FREIGHT PROGRAM

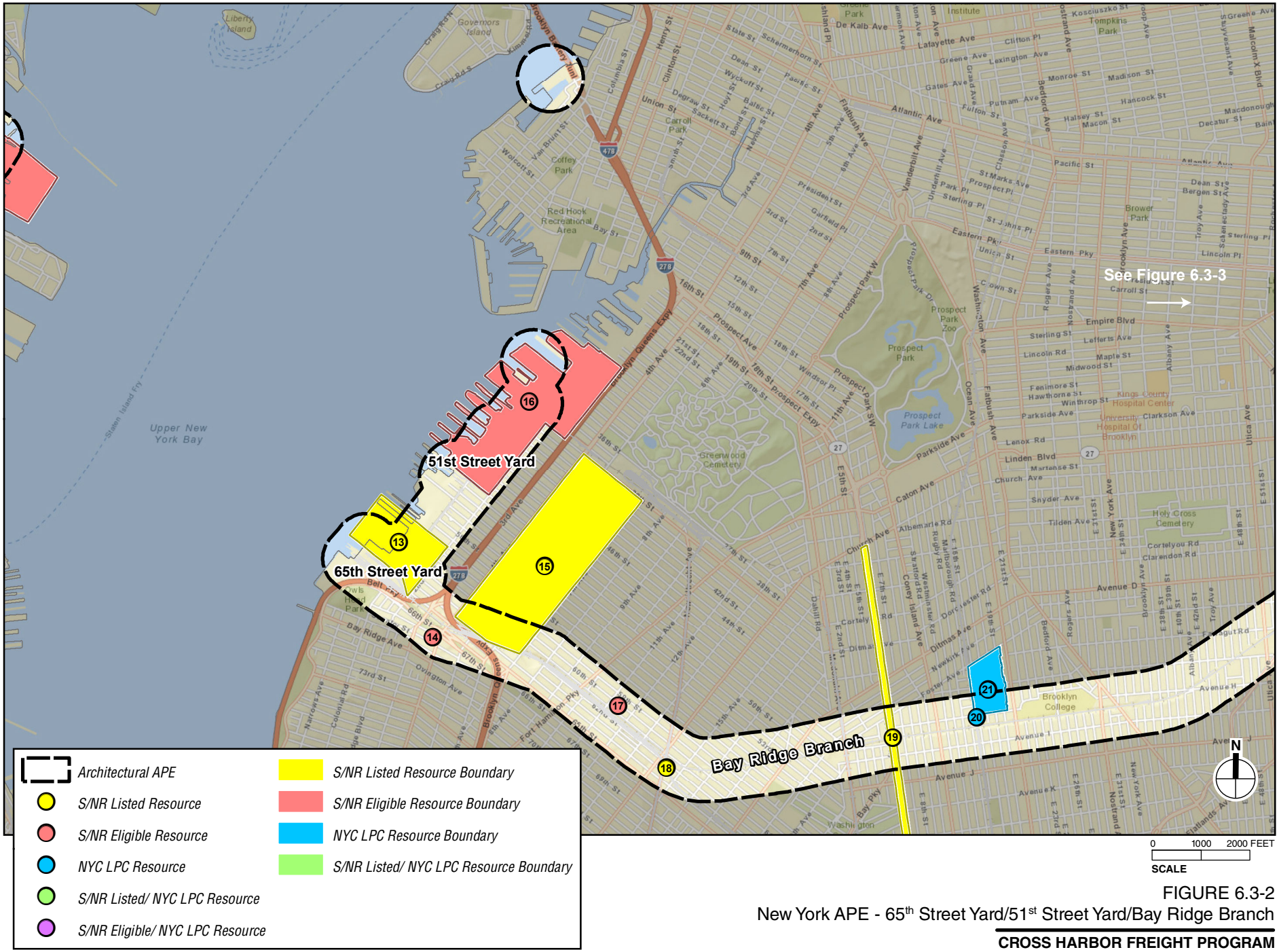

FIGURE 6.3-2
New York APE - 65th Street Yard/51st Street Yard/Bay Ridge Branch

CROSS HARBOR FREIGHT PROGRAM

5.13.14

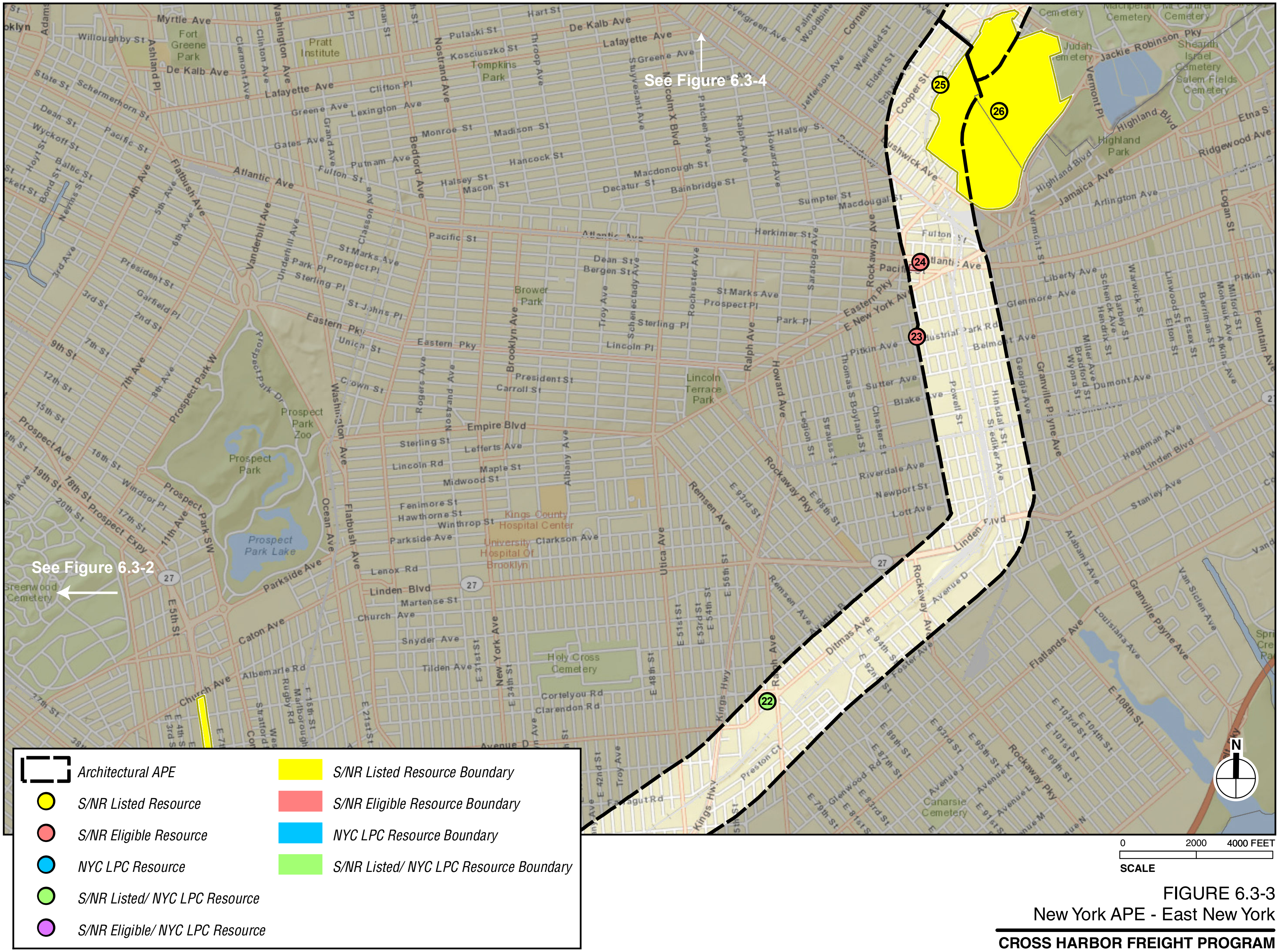

FIGURE 6.3-3
New York APE - East New York

CROSS HARBOR FREIGHT PROGRAM

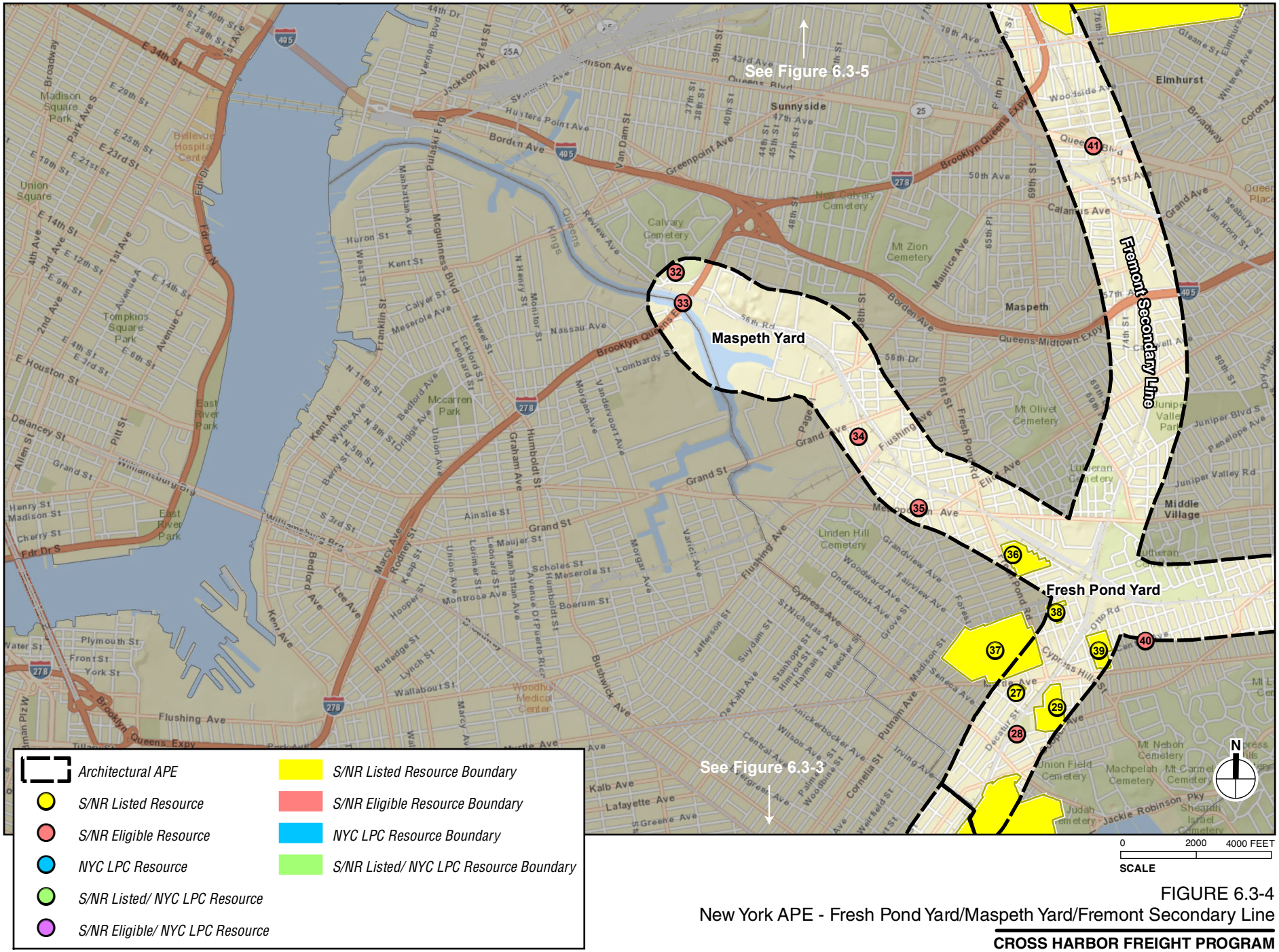

FIGURE 6.3-4
New York APE - Fresh Pond Yard/Maspeth Yard/Fremont Secondary Line

CROSS HARBOR FREIGHT PROGRAM

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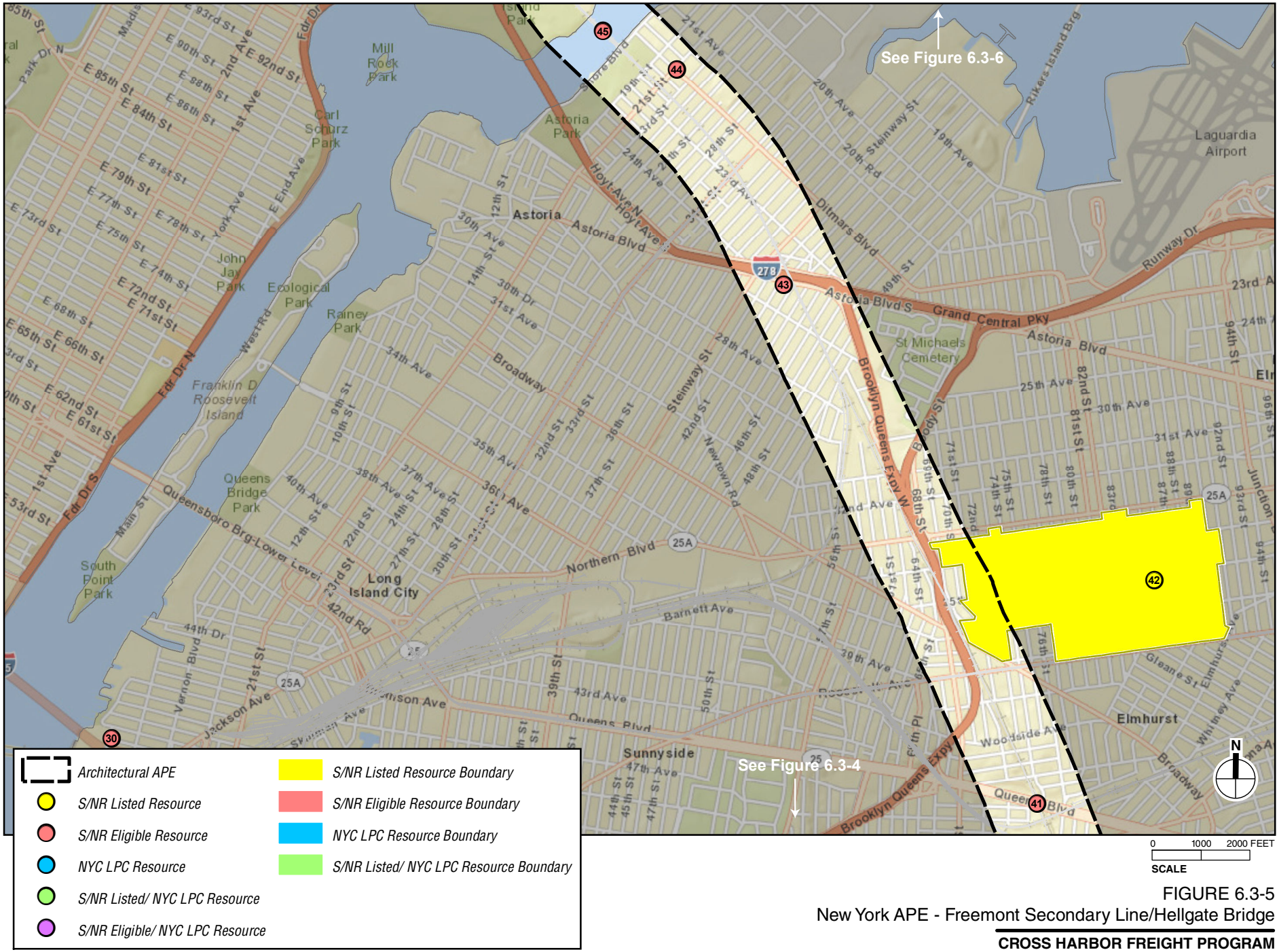

FIGURE 6.3-5
New York APE - Freemont Secondary Line/Hellgate Bridge

CROSS HARBOR FREIGHT PROGRAM

5.13.14

FIGURE 6.3-6
New York APE - Oak Point Yard

CROSS HARBOR FREIGHT PROGRAM

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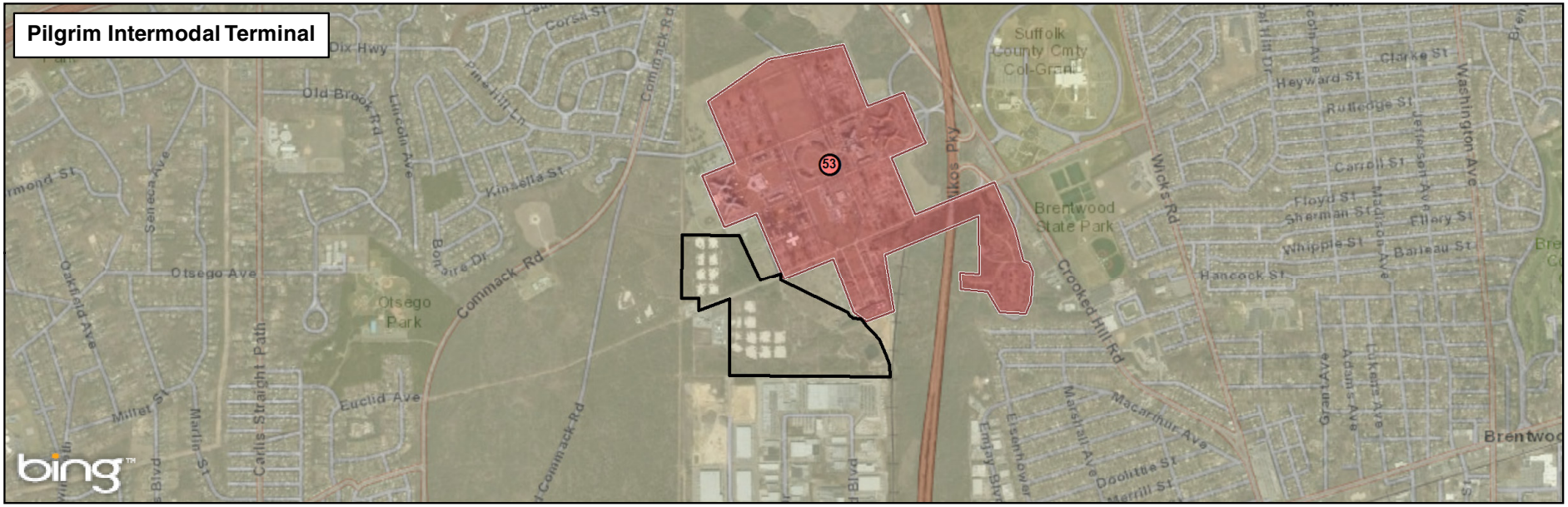

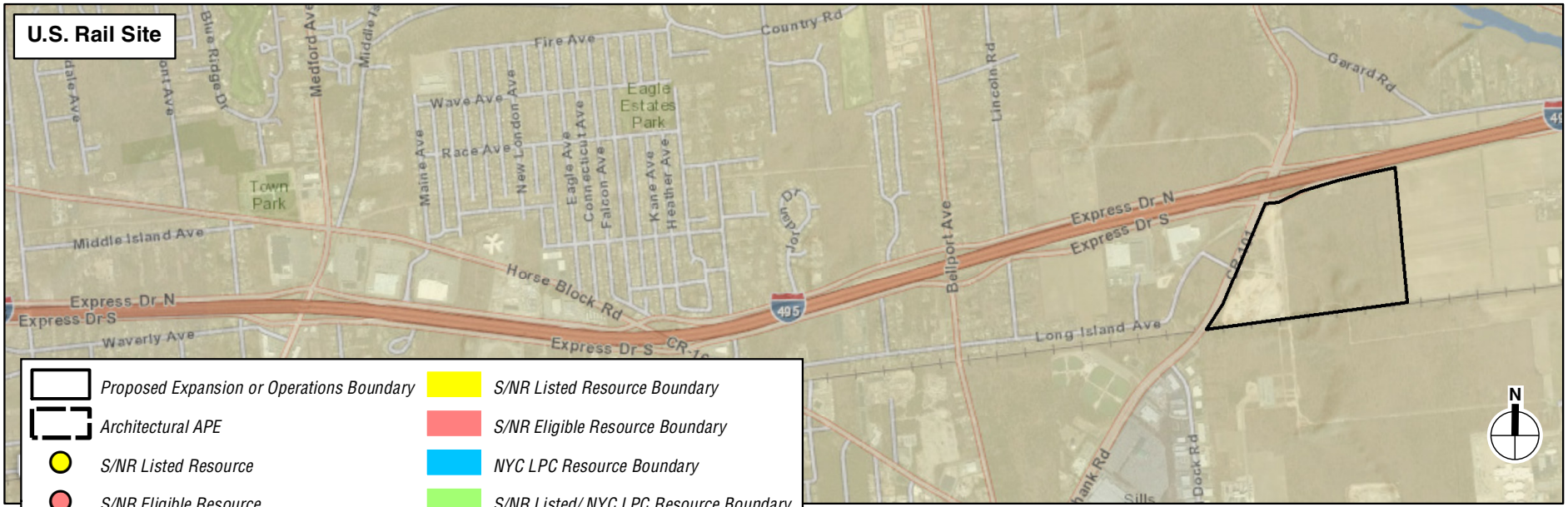

- Proposed Expansion or Operations Boundary
- Architectural APE
- S/NR Listed Resource
- S/NR Eligible Resource
- NYC LPC Resource
- S/NR Listed/ NYC LPC Resource
- S/NR Eligible/ NYC LPC Resource
- S/NR Listed Resource Boundary
- S/NR Eligible Resource Boundary
- NYC LPC Resource Boundary
- S/NR Listed/ NYC LPC Resource Boundary

0 1000 2000 FEET
SCALE

Note: 2010 EA found no known historical or archaeological reosurces in the study area or vicinity

FIGURE 6.3-7
Potential Long Island Freight Facility Locations

CROSS HARBOR FREIGHT PROGRAM

IDENTIFICATION OF KNOWN RESOURCES

Once the architectural APE was delineated, a list of officially recognized architectural resources "known architectural resources") within the APE was compiled. This inventory was compiled based on the files of NYSHPO, the New York State Museum (NYSM), NJSHPO, the New Jersey State Museum (NJSM), NYCLPC, and other relevant sources. Resource types include National Historic Landmarks (NHLs); properties or districts listed on the NR and/or the New York or New Jersey State Registers of Historic Places (SRs), or determined eligible for such listing; New York City Landmarks and Historic Districts (NYCLs) and properties that have been considered for designation ("heard") by NYCLPC at a public hearing or calendared for consideration at such a hearing ("pending" NYCLs); and properties or districts designated by the Jersey City Historic Preservation Commission.

Architectural Resources

As part of the 2004 *Cross Harbor Freight Movement Project DEIS* ("2004 DEIS"), a list of potential architectural resources within the APE for that project was compiled. These were identified based on field surveys of the APE by architectural historians and by consulting secondary sources. Potential resources were identified based on the National Park Service's criteria for listing on the National Register of Historic Places. As part of the previous project, Historic Resource Inventory Forms were prepared for the potential architectural resources and submitted to the respective SHPOs and to NYCLPC for evaluation and eligibility determinations. Architectural resources determined eligible for the S/NR as part of the 2004 DEIS were included in the existing conditions data collection effort for the current project.

Potential architectural resources are previously undesignated properties that appear to meet the criteria for listing on the State/National Register and/or for designation as NYCLs. Potential architectural resources with the APE, in addition to those known or previously identified resources discussed above, have not been identified as part of this Tier I analysis. Any such resources would be identified and analyzed as part of any Tier II analysis conducted in the future for this project.

Archaeological Resources

As part of the 2004 DEIS, documentary research was undertaken by professional archaeologists to determine the 2004 project's potential to affect archaeological resources located within that project's archaeological APE. For potentially sensitive portions of that project's APE, Phase IA archaeological documentary studies were prepared. When an archaeological APE is delineated for this project, as part of any subsequent Tier II environmental review, coordination with the NYSHPO and NJSHPO and possible additional archaeological analysis would be necessary to determine the archaeological sensitivity of the portions of the archaeological APE that have not been previously evaluated. This coordination would be undertaken as part of the Tier II documentation.

IDENTIFICATION OF EFFECTS ON KNOWN RESOURCES

Once the cultural resources in the APEs were identified, the potential effects of the project on those resources were assessed.

As noted above, potential effects on architectural resources can include both direct physical impacts and indirect, contextual impacts, such as the isolation of a property from its surrounding environment, or the introduction of visual, audible, or atmospheric elements that are out of character with a property or that alter its setting. It is anticipated that vibration levels created by

the proposed project would not be high enough to cause direct effects (cosmetic or structural damage) to architectural structures.

Effects to archaeological resources could occur where disturbance to potentially sensitive strata could result from construction of new rail yards, improvement of existing rail yards, extension of track clearances more than three feet, reconstruction of clearances, and construction of the open-cut and cut-and-cover portions of the new tunnels. Effects to archaeological resources could also occur where boring machines would physically impact potentially sensitive strata to construct portions of new tunnels.

IDENTIFICATION OF AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES

The last section of this chapter outlines further research and evaluation steps that would be undertaken as part of Tier II documentation, when engineering designs are available for all of the project alternatives that are carried through to the Tier II documentation. Additional steps may include the identification of potential architectural resources (resources that appear to meet the NR eligibility criteria but have not been previously evaluated by NYSHPO or NJSHPO) in the APE and preparation of additional Phase IA documentary studies. The Tier II documentation would also identify the project alternatives' potential for affect cultural resources and identify measures to avoid, minimize, or mitigate any potential effects that may be identified.

C. EXISTING CONDITIONS

ARCHITECTURAL RESOURCES

WEST-OF-HUDSON APE

A summary of the known architectural resources located in the west-of-Hudson (New Jersey) portion of the APE is presented in **Table 6.3-1** and illustrated on **Figure 6.3-1**. There are twelve architectural resources in the New Jersey portion of the APE between Oak Island South and Greenville Yard. One of these resources, the Morris Canal, is listed on the New Jersey and National Registers of Historic Places. The others have been determined eligible for S/NR listing.

Of the architectural resources in the APE in New Jersey, eight are located partially within the boundaries of Oak Island and/or Greenville Yard. These resources include the Lehigh Valley Railroad Historic District, the Pennsylvania Railroad New York Bay Branch Historic District, the U.S. Routes 1 & 9 Historic District, the South Street Viaduct, the Central Railroad of New Jersey (Newark and Elizabeth Branch), the Lehigh Valley Railroad Oak Island Yard Historic District, the Greenville Yard Historic District, and Greenville Yard Piers.

EAST-OF-HUDSON APE

A summary of the known architectural resources located in the east-of-Hudson (New York) portion of APE is presented in **Table 6.3-2** and illustrated on **Figures 6.3-2** through **6.3-7**. There are 41 known architectural resources in the New York portion of the APE. Six of these are NYCLs, another two are NYCL-eligible; 12 are S/NR-listed, and 26 are S/NR-eligible.

Of the architectural resources in the APE in New York, two are located in the vicinity of project-related activities. These include the S/NR-listed and NYCL-eligible Brooklyn Army Terminal and the S/NR-eligible Bush Terminal Historic District. In addition, the S/NR-eligible Robert F. Kennedy/Triborough and Bronx Kill Bridges are within the Fremont Secondary Line corridor connecting Oak Point Yard and other points south via the Hell Gate Bridge.

Table 6.3-1
Architectural Resources in the Architectural APE in New Jersey

Ref. No.	Name	Address/Location	S/NR Listed	S/NR Eligible
1	Pennsylvania Railroad New York To Philadelphia Historic District	Pennsylvania Railroad ROW		X
2	The City of Newark Sewers	City of Newark		X
3	Lehigh Valley Railroad Historic District	Main line between Phillipsburg and Perth Amboy; Main Line in South Plainfield to Roselle		X
4	Pennsylvania Railroad New York Bay Branch Historic District	PRR NY Bay Branch Historic Right-of-Way		X
5	U.S. Routes 1 & 9 Historic District	A 6.25 mile segment extending from the Holland Tunnel to Station 351+35		X
6	South Street Viaduct (SI&A #0703153)	Route 1 Extension spanning Conrail and Wheeler Point Road, Newark		X
7	Central Railroad of NJ, Newark and Elizabeth Branch	5.45 miles between Brills Junction and Elizabethport		X
8	Lehigh Valley Railroad Oak Island Yard Historic District	East and west of Doremus Avenue within the former Newark Meadow, Newark		X
9	Passaic Valley Sewerage Commission Newark Bay Outfall Sewerage Works	Doremus and Wilson Avenues, Newark		X
10	Morris Canal	From the Delaware River in Warren County to the Hudson River in Hudson County	X	
11	Greenville Yard Historic District	Upper New York Bay, Jersey City		X
12	Greenville Yard Piers	South of Claremont Terminal channel on Upper New York Bay, Jersey City		X

Notes:
S/NR: Listed on State and National Registers
S/NR-Eligible: Previously determined eligible for listing on the State and/or National Registers of Historic Places

Table 6.3-2
Architectural Resources in the APE in New York

Ref. No.	Name	Address/Location	NYCL	S/NR	S/NR-eligible	NYCL-eligible
13	Brooklyn Army Terminal (U.S. Army Military Ocean Terminal)	West of Second Avenue between 58th and 64th Streets, Brooklyn		X		X
14	High School for Telecommunication Arts & Technology	350 67th Street, Brooklyn			X	
15	Sunset Park Historic District	Between 39th and 64th Streets and Fourth and Seventh Avenues, Brooklyn		X		
16	Bush Terminal Historic District	Between 28th Street and 50th Street, west of 2nd Avenue, Brooklyn			X	
17	Fire House; Engine Co. 247	1136 60th Street, Brooklyn			X	
18	New Utrecht Avenue Station	62nd Street between New Utrecht Avenue and 15th Street, Brooklyn			X	
19	Ocean Parkway Historic District	Between Avenues H and I, Brooklyn	X	X		
20	Avenue H Station House	802 East 16th Street, Brooklyn	X			
21	Fiske Terrace-Midwood Park Historic District	Between Foster Avenue and Avenue H, Railroad ROW to west, and Ocean Avenue to the east, Brooklyn	X			
22	Pieter Wyckoff House	5816 Clarendon Road	X	X		
23	The State Bank	1788-97 Pitkin Avenue, Queens			X	
24	Our Lady of Loretto Historic District	Pacific Street and Sackman Street			X	

Table 6.3-2 (cont'd)
Architectural Resources in the APE in New York

Ref. No.	Name	Address/Location	NYCL	S/NR	S/NR-eligible	NYCL-eligible
25	Wilson Avenue Station	Wilson Avenue at Moffat Street			X	
26	Evergreens Cemetery	Bushwick Avenue, Jackie Robinson Parkway, Cooper Avenue, and Cypress Avenue, Brooklyn and Queens		X		
27	Summerfield Street Row Historic District of Ridgewood Multiple Resource Area	Summerfield Street between Myrtle and Forest Avenues, Queens		X		
28	PS 68-Q	5909 St. Felix Avenue			X	
29	75th Avenue-61st Street Historic District	Bounded by 74th Avenue to the north, 62nd Street to the eat, Felix Avenue to the south, and 60th Place to the west		X		
30	Pennsylvania Railroad Power House	2-17 51st Avenue, Queens			X	
31	Byrne Memorial Bridge	Greenpoint Avenue between Brooklyn and Queens			X	
32	Old Calvary Cemetery	Bounded by Review Avenue, Laurel Hill Blvd, Greenpoint Avenue, and Long Island Expressway, Queens			X	
33	Kosciuszko Bridge	Brooklyn Queens Expressway over Newtown Creek, Brooklyn and Queens			X	
34	P.S. 9 (Walter Reed School)	58-74 57th Street, Queens			X	
35	Fire House: Engine Company 291/Hook & Ladder 140	56-07 Metropolitan Avenue, Queens			X	
36	Fresh Pond-Traffic Historic District	Between Traffic Avenue, Fresh Pond Road, Grove and Woodbine Streets, Queens		X		
37	Central Ridgewood Historic District	67th Avenue to the north, Fresh Pond Road to the east, 71st Avenue to the south, and Putnam Avenue to the west		X		
38	68th Avenue- 64th Place-Historic District	68th Avenue between 64th Street and 65th Street		X		
39	Central Avenue Historic District of the Ridgewood Multiple Resource Area	Between 70th and Myrtle Avenues and 65th Street and 66th Place, Queens		X		
40	68-10 Central Avenue	68-10 Central Avenue, Queens			X	
41	New York Connecting Railroad Bridge	Crosses above Queens Boulevard, Queens			X	
42	Jackson Heights Historic District	Bounded by Northern Boulevard to the north, 91st Street to the east, Roosevelt Avenue to the south, and 69th Street to the west, Queens		X		
43	Fire House: Engine Company 263/Hook & Ladder 117	42-06 Astoria Boulevard, Queens			X	X
44	21-21 Ditmars Avenue	21-21 Ditmars Avenue, Queens			X	
45	Hell Gate Bridge (New York Connecting Railroad Bridge)	Spans the Hell Gate Channel between Randall's/Wards Island and Astoria, Queens			X	
46	Wards Island Viaduct	Traverses Wards Island			X	
47	Little Hell Gate Bridge	Spans East River connecting Wards and Randall's Islands			X	

Table 6.3-2 (cont'd)
Architectural Resources in the APE in New York

Ref. No.	Name	Address/Location	NYCL	S/NR	S/NR-eligible	NYCL-eligible
48	Randall's Island Viaduct	Traverses Randall's Island			X	
49	Robert F. Kennedy/Triborough Bridge	Over Bronx Kill			X	
50	Bronx Kill Bridge	New York Connecting Railroad (Amtrak) over Bronx Kill			X	
51	Longwood Historic District and Extension	Prospect Avenue, Longwood Avenue, Leggett Avenue, and Fox Street, Bronx	X			
52	The American Bank Note Company	1201 Lafayette Avenue, Bronx	X		X	
53	Pilgrim Psychiatric Center Historic District	998 Crooked Hill Road, West Brentwood, Long Island, New York			X	

ARCHAEOLOGICAL RESOURCES

While detailed design of the project alternatives has not progressed in this Tier I EIS, project-related construction activities could result in ground disturbance at a number of locations. Potential locations include Oak Island South, Greenville Yard, and the Greenville Branch in New Jersey, along with some construction activities at Port Newark/Port Elizabeth to accommodate the truck float/truck ferry and container barge activities. In the east-of-Hudson region, construction could take place at South Brooklyn Marine Terminal, 51st Street Yard, 65th Street Yard, Red Hook, East New York Yard, and the Bay Ridge Branch; in Queens, Fresh Pond Yard and Maspeth Yard, and the Montauk Branch between those two sites; and in the Bronx, Oak Point Yard, Hunts Point, and the Fremont Secondary Line between Fresh Pond Yard and Oak Point Yard. As discussed in Chapter 4, the two Long Island sites are discussed in this EIS as illustrative examples of the operational effects of project alternatives on facilities located in Long Island. Both sites have already begun or completed a separate environmental review process, therefore, to delineate separate APEs for these sites would not be appropriate at this time.

Three of the facilities that may be required for the project alternatives were previously the subject of Phase IA Archaeological Documentary Studies as part of the 2004 DEIS. These include Greenville Yard in New Jersey, 65th Street Yard in Brooklyn, and Maspeth Yard and Phelps Dodge/West Maspeth in Queens.

WEST-OF-HUDSON

Oak Island

Oak Island was not included in the APE for the 2004 DEIS. Therefore, no previous archaeological assessment has been conducted to evaluate the archaeological sensitivity of Oak Island. Due to the high density of existing transportation infrastructure that currently occupies Oak Island South and the surrounding area, it is likely that substantial ground disturbance has occurred in this area, which would have destroyed or disturbed any precontact or historic period archaeological deposits that may have been present in this area. Consultation with NJHPO would be undertaken as part of any future Tier II documentation.

Greenville Yard

An archaeological documentary study entitled *Stage IA Archaeological Assessment, Cross Harbor Freight Movement Project, Greenville Yards, Jersey City, Hudson County, New Jersey* was prepared by The Louis Berger Group, Inc. in 2001 as part of the Cross Harbor Freight Movement Project. The APE for the archaeological study included most of the Greenville Yard APE for this proposed project and extended beyond it to the west, south, and east to include the entirety of Greenville Yard and off-shore submerged land. The Phase IA concluded that the archaeological sensitivity of the Greenville Yard APE is very low with the exception of the S/NR-listed Morris Canal, which traversed the far western edge of the APE. The Morris Canal, which is buried in this area, is considered a sensitive historic-period archaeological resource. In a letter dated June 1, 2010 NJHPO concurred with the conclusions of the Phase IA study.

The location of the sensitive Morris Canal is within a small area of the western portion of Greenville Yard. Therefore, project activities at Greenville Yard have the potential to affect this historic-period archaeological resource. In addition, the construction of some Build Alternatives (e.g., Rail Tunnel with AGV Technology Alternative) would affect portions of Greenville Yard not analyzed in the 2001 Phase IA. A supplemental archaeological documentary study would be required for alternatives that affect this area of the yard. Consultation with NJHPO would be undertaken as part of any future Tier II documentation.

EAST-OF-HUDSON

Red Hook

Red Hook was not included in the APE for the 2004 DEIS; therefore, no previous archaeological assessment has been conducted to evaluate the archaeological sensitivity of this area. Although the Red Hook portion of the study area includes areas where substantial ground disturbance has occurred, a Phase IA may be required during subsequent environmental review if this alternative is selected. Consultation with NYSHPO would be undertaken as part of any future Tier II documentation.

51st Street Yard

51st Street Yard was not included in the APE for the 2004 DEIS and no previous archaeological assessment has been conducted to evaluate the archaeological sensitivity of this area. Although the 51st Street Yard portion of the study area includes areas where substantial ground disturbance has occurred, a Phase IA may be required if this site is selected for further consideration in a Tier II document. Consultation with NYSHPO would be undertaken as part of any future Tier II documentation.

65th Street Yard

A *Phase IA Archaeological Assessment for the 65th Street Rail Yard, Bay Ridge Tunnel Alignment, Brooklyn, Kings County, New York*, was completed by John Milner Associates, Inc. in April 2002 as part of the Cross Harbor Freight Movement Project. Some portions of the yard that may be affected by the Build Alternatives were not included in the previous Phase IA Study; therefore, a supplemental archaeological documentary study would likely be required to assess the archaeological sensitivity of this area. Consultation with NYSHPO would be undertaken as part of any future Tier II documentation.

The Phase IA identified no previously recorded archaeological sites within or in the immediate vicinity of the APE. Further, because a substantial degree of sub-surface ground disturbance was documented in the APE, the Phase IA Study concluded that the APE possessed low sensitivity

for precontact period archaeological deposits. A portion of the APE is considered sensitive for transportation-related or industrial sites associated with the 1870s construction of the rail yard, the 1880s burning and rebuilding of the rail yard, and use of the railroad depot and yard in the late 19th century. If project-related ground disturbance would occur within the historic rail yard boundaries and outside of the existing rail right-of-way, Phase IB archaeological testing would be recommended to confirm the presence or absence of archaeological resources.

East New York APE

East New York Yard was not included in the APE for the 2004 DEIS. Therefore, no previous archaeological assessment has been conducted to evaluate the archaeological sensitivity of the East New York Yard portion of the study area. Due to the high density of existing transportation infrastructure that currently occupies the vicinity of the East New York Yard site (including the Bay Ridge Branch), it is likely that substantial ground disturbance has occurred in this area which would have destroyed or disturbed any precontact or historic period archaeological deposits that may have been present in this area. Consultation with NYSHPO would be undertaken as part of any future Tier II documentation.

Fresh Pond APE

Fresh Pond Yard was not included in the APE for the 2004 DEIS; however, an archaeological evaluation of the APE was prepared for a previous project. The borings that were taken as part of that archaeological evaluation indicated that fill extends to at least 4 to 12 feet below the ground surface and that there is no evidence of potentially habitable prehistoric living surfaces present at the site. The site was also determined not to possess historic period archaeological sensitivity. Further, due to the high density of existing transportation infrastructure that currently occupies Fresh Pond Yard, it is likely that substantial ground disturbance has occurred in this area which would have destroyed or disturbed any precontact or historic period archaeological deposits that may have been present in this area. The archaeological evaluation concluded that the Fresh Pond Yard site is not sensitive for prehistoric or historic period archaeological resources. NYSHPO concurred with these findings in comments dated January 12, 2000 and November 17, 2000.

Maspeth Yard and Phelps Dodge/West Maspeth APE

A Phase IA Archaeological Assessment for the proposed Maspeth Rail Yard, Maspeth, Queens County, New York, was completed by John Milner Associates, Inc. in August 2002 as part of the 2004 DEIS. The APE for this documentary study included 150 acres of land and an additional nine acres within the waterways of Maspeth and Newtown Creeks. The Phase IA observed that the terrestrial portions of the APE were covered landfill which was deposited in the 1930s and 1940s and extended between 2 and 27 feet below ground surface. Commercial and light industrial buildings occupied portions of the project site, likely resulting in varying degrees of sub-surface disturbance.

The Phase IA study concluded that the majority of the APE is sensitive for historic and prehistoric period archaeological resources. The only portion of the APE that was determined to lack sensitivity was the Phelps Dodge site, which occupies portions of Blocks 2529 and 2554 and is encompassed within the current project APE. The area most likely to contain intact archaeological deposits is the southeastern portion of Block 2575, located north of Maspeth Avenue and west of Rust Road, a portion of which is included in the current project APE. This area was historically characterized by a rise in topography and therefore may have hosted Native American habitation. The same area was the location of the Way-Mott Farmstead, the circa 1819

Garritt Furman Mansion, and the Way-Mott Cemetery. Thirteen burials were reportedly moved from the Way-Mott Cemetery to Prospect Park in 1950. The Phase IA Assessment recommended that Phase IB archaeological testing be performed in this area to determine the presence or absence of archaeological resources associated with the Native American habitation of Maspeth, the Way-Mott Farmstead, the Garritt Furman Mansion, and the Way-Mott Cemetery.

Oak Point Yard

Oak Point Yard was not included in the APE for the 2004 DEIS. No previous archaeological assessment has been conducted to evaluate the archaeological sensitivity of the Oak Point Yard portion of the study area. Due to the high density of existing transportation infrastructure that currently occupies Oak Point Yard, it is likely that substantial ground disturbance would have destroyed or disturbed any precontact or historic period archaeological deposits that may have been present. Consultation with NYSHPO would be undertaken as part of any future Tier II documentation.

Hunts Point

Hunts Point was not included in the APE for the 2004 DEIS. Previous archaeological assessments have been conducted to evaluate the archaeological sensitivity of Hunts Point and other adjacent areas. These assessments include the 2001 *Analysis of Soil Borings and Test Trenches, Proposed Fish Market Relocation, Hunts Point, Bronx, New York* by Greenhouse Consultants Inc., which has been redeveloped with the fish market and encompasses much of the Hunts Point site. Due to the high density of existing transportation infrastructure and facilities that currently occupy the Hunts Point site, substantial ground disturbance could have previously destroyed or disturbed any precontact or historic period archaeological deposits that may have been present. However, consultation with NYSHPO would be undertaken as part of any future Tier II documentation to determine whether any further archaeological assessments of the Hunts Point site are warranted

Nassau/Suffolk Facilities

The Pilgrim Intermodal Terminal site was the subject of the 2007 LITRIM project EIS that included the preparation of Phase IA and Phase IB archaeological assessments. An archaeological study was undertaken in 2004 by Binghamton University, State University of New York, and a *Public Archaeology Facility Report* based on this study was prepared in December 2004. This report was updated in November 2005. The LITRIM archaeological APE included limited portions of the Pilgrim Psychiatric Center Historic District, G Road, Crooked Hill Road, the Sagtikos Parkway south of the Long Island Expressway (LIE), and the LIE. The LITRIM Phase IA identified one archaeological site—the Pilgrim I site—as potentially eligible for listing on the NR as a contributing component of the S/NR-eligible Pilgrim Psychiatric Center Historic District. However, the Phase IB report concluded that, because the data recovery potential for the Pilgrim I site had been exhausted and additional excavation would be unlikely to yield more information important to understanding the history of the Pilgrim Psychiatric Center, preservation in place was not warranted. No further testing was recommended for the Pilgrim I site. The roadway improvement areas for the LITRIM project were located in previously disturbed areas and the proposed project work would involve minimal subsurface disturbance that would not result in an adverse effect on potential archaeological resources. Further, NYSHPO concurred with the report's finding of no adverse effect on cultural resources in or eligible for inclusion in the S/NRs.

The Brookhaven Rail Terminal was evaluated for potential archaeological sensitivity as part of the 2010 Brookhaven Rail Terminal project Environmental Assessment (EA). The cultural resources analysis for that project concluded that the Brookhaven Rail Terminal is not sensitive for archaeological resources.

D. POTENTIAL IMPACTS OF THE NO ACTION AND PROJECT ALTERNATIVES

As described above under Existing Conditions, known architectural resources have been identified and mapped in the APE for this project. Potential architectural resources would be identified as part of any future Tier II documentation. In general, resources in the APEs could be subject to direct effects or indirect effects (i.e., visual, contextual, and atmospheric) as a result of the proposed project.

Because project design has not yet progressed to a point sufficient to enable detailed analyses of potential project impacts, specific potential impacts on resources in the APEs cannot be provided as part of this Tier I EIS. Potential impacts are therefore described generally and only where they may differ between alternatives.

OPERATIONAL EFFECTS

NO ACTION ALTERNATIVE

Operational activities related to projects identified as part of the No Action Alternative would create a small increase in train and float activity in the study area; however, this increase is not expected to adversely affect architectural resources in the APEs.

As mentioned previously, the No Action Alternative also includes certain undertakings that are part of the overall CHFP, such as work to improve Greenville Yard and 65th Street Yard. A separate set of environmental review processes have previously been completed for the Greenville Yard project, with separate documentation approved by FHWA[1]. During the course of the environmental review, NJHPO determined that the demolition of the Greenville Yard Lift Bridge would have an adverse effect on the State and National Register of Historic Places-eligible bridge itself, and two of the surrounding historic districts. As a result, PANYNJ and FHWA agreed to develop and implement measures to minimize and mitigate the adverse effect, including recordation of the lift bridge and its component parts to augment previous historic records, and a salvage and relocation plan for components of the lift bridge. These commitments were pledged in a Memorandum of Agreement (MOA) between PANYNJ, FHWA, and NJHPO, signed on March 17, 2011 and the implementation of these commitments is ongoing.

Since the completion of that document, the Greenville Yard Lift Bridge has been demolished in an emergency action, due to damage from Superstorm Sandy. Since, at the time, PANYNJ was still in the process of implementing the provisions of the aforementioned MOA, PANYNJ requested that it be released from provisions of the MOA requiring salvage and relocation of the lift bridge and its components; PANYNJ committed to completing remaining feasible MOA provisions, such as Historic American Engineering Record (HAER) package, and continued

[1] *Categorical Exclusion Documentation and Final Section 4(f) Evaluation, for the Acquisition and Replacement of Greenville Yard Lift Bridge* (March 2011), and the subsequent *Greenville and 65th Street Yards Categorical Exclusion Re-evaluation Statement* (November 2013)

coordination with NJHPO to find other opportunities to mitigate the adverse impact to the lift bridge and surrounding historic districts from the demolition.

WATERBORNE ALTERNATIVES

Enhanced Railcar Float Alternative

Architectural Resources

West-of-Hudson APE

Several architectural resources within the west-of-Hudson APE derive their significance as architectural resources from a rail-related context: the Lehigh Valley Railroad Historic District, the Pennsylvania Railroad New York Branch Historic District, the Lehigh Valley Railroad Oak Island Historic District, the Central Railroad of New Jersey Newark and Elizabeth Branch Historic District, the Greenville Yard Historic District, and the Greenville Yard Piers (see **Figure 6.3-1**). Therefore, increased train and float activity at rail yards and rail lines within the architectural resources APE, such as at Greenville Yard, would be consistent with current and historic uses and would not result in adverse effects on these architectural resources. Other architectural resources, such as the City of Newark Sewers, are located at the far edges of the architectural resources APE boundary. In addition, the South Street Viaduct and the U.S. Routes 1 & 9 Historic District only pass through the architectural resources APE briefly on viaduct structures. Therefore, it is not expected that there would be any adverse direct or indirect effects to historic architectural resources or to the visual character of these architectural resources in the west-of-Hudson APE. Further analysis of this alternative would be undertaken as part of any future Tier II documentation.

East-of-Hudson APE

51st Street Yard, 65th Street Yard, and the Bay Ridge Branch

The operation of the Brooklyn waterfront facilities and increased rail traffic on the Bay Ridge Branch would be in keeping with the historic and current uses of 65th Street Yard, 51st Street Yard and the Bay Ridge Branch and would not be expected to adversely affect these architectural resources. The remaining architectural resources, located entirely or partially within the Bay Ridge Branch of portion of the east-of-Hudson APE have the potential to be indirectly adversely affected by rail traffic from increased operational noise and vibration. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken as part of any future Tier II level documentation.

East New York APE

The architectural resources identified within the East New York Yard portion of the APE (**Figure 6.3-3**), which include the Pieter Wyckoff House (S/NR, NYCL) and Evergreens Cemetery (S/NR), could be indirectly adversely affected by the Enhanced Railcar Float Alternative's rail traffic due to increased operational noise and vibration. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken at part of any future Tier II documentation.

Fresh Pond Yard APE, Maspeth Yard APE, the Montauk Branch

As shown in **Figure 6.3-4**, several historic districts (S/NR) are located within the Fresh Pond Yard architectural resources APE. Several S/NR-eligible architectural resources are also located within the Montauk Branch portion of the APE connecting the Fresh Pond Yards APE and the Maspeth Yard APE on the Fremont Secondary Line leading north from Fresh Pond (**Figure**

6.3-5). With the operation of the Enhanced Railcar Float Alternative, these architectural resources may be indirectly adversely affected by rail traffic due to increased operational noise and vibration. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken at part of any future Tier II level documentation.

Oak Point Yard and Hunts Point APE

Several architectural resources are located in the Oak Point Yard APE (**Figure 6.3-6**), including bridges and viaduct structures over Wards Island and Randall's Island, including the Hell Gate Bridge. Increased train activity on these bridges would be consistent with current and historic uses and would not be expected to result in adverse effects on these architectural resources. The Longwood Historic District (NYCL), located partially within the Oak Point Yard APE, and the American Bank Note Company (S/NR-eligible, NYCL) could experience indirect adverse effects from rail traffic due to increased noise and vibration. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken at part of any future Tier II level documentation.

No architectural resources are located in the Hunts Point APE and therefore no adverse effects on these resources would be expected.

Archaeological Resources

Any potential impacts from Enhanced Railcar Float Alternative on archaeological resources would be limited to construction period impacts, discussed below.

Truck Ferry Alternative

Architectural Resources

West-of-Hudson APE

Increased ferry activity at the western termini of this alternative would be consistent with current and historic uses of the area as ports and waterfront freight handling facilities and would not result in adverse effects on architectural resources within the west-of-Hudson (New Jersey) APE. Other architectural resources, such as the City of Newark Sewers, are located at the far edges of the architectural resources APE boundary. In addition, the South Street Viaduct and the U.S. Routes 1 & 9 Historic District only pass through the architectural resources APE briefly on viaduct structures at the western edge. Therefore, it is not expected that there would be any adverse direct or indirect effects to historic architectural resources or to the visual character of these architectural resources in the west-of-Hudson APE. Further analysis of this alternative would be undertaken as part of any future Tier II documentation.

East-of-Hudson APE

SBMT, 51st Street Yard, 65th Street Yard

The waterfront portion of the Brooklyn architectural resources APE (see **Figure 6.3-2**) is partially within the boundaries of the Brooklyn Army Terminal complex and the Bush Terminal Historic District. The operation of the eastern termini of this alternative would be in keeping with the historic and current uses of both architectural resources and would not be expected to adversely affect these architectural resources. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken as part of any future Tier II level documentation.

Oak Point Yard and Hunts Point APE

Several architectural resources are located in the Oak Point Yard APE (**Figure 6.3-6**), including bridges and viaduct structures over Wards Island and Randall's Island, including the Hell Gate Bridge, the Longwood Historic District (NYCL), located partially within the Oak Point Yard APE, and the American Bank Note Company (S/NR-eligible, NYCL). However, the operation of the eastern termini of this alternative would be limited to the waterfront and in keeping with the historic and current uses of the area as a working waterfront and would not be expected to adversely affect these architectural resources. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken as part of any future Tier II level documentation. No architectural resources are located in the Hunts Point APE and therefore no adverse effects on these resources could be expected.

Archaeological Resources

Any potential impacts from the Truck Ferry Alternative on archaeological resources would be limited to construction period impacts, discussed below.

Truck Float Alternative

Architectural Resources

West-of-Hudson APE

Potential effects from the operation of the Truck Float Alternative would be identical to those described under the Truck Ferry Alternative above. Increased float activity at the western termini of this alternative would be consistent with current and historic uses of the area as ports and waterfront freight handling facilities and would not result in adverse effects on architectural resources within the west-of-Hudson (New Jersey) APE. Other architectural resources, such as the City of Newark Sewers, are located at the far edges of the architectural resources APE boundary. In addition, the South Street Viaduct and the U.S. Routes 1 & 9 Historic District only pass through the architectural resources APE briefly on viaduct structures at the western edge. Therefore, it is not expected that there would be any adverse direct or indirect effects to historic architectural resources or to the visual character of these architectural resources in the west-of-Hudson APE. Further analysis of this alternative would be undertaken as part of any future Tier II documentation.

East-of-Hudson APE

SBMT, 51st Street Yard, 65th Street Yard

The waterfront portion of the Brooklyn architectural resources APE (see **Figure 6.3-2**) is partially within the boundaries of the Brooklyn Army Terminal complex and the Bush Terminal Historic District. The operation of the eastern termini of this alternative would be in keeping with the historic and current uses of both architectural resources and would not be expected to adversely affect these architectural resources. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken as part of any future Tier II level documentation.

Oak Point Yard and Hunts Point APE

Several architectural resources are located in the Oak Point Yard APE (**Figure 6.3-6**), including bridges and viaduct structures over Wards Island and Randall's Island, including the Hell Gate Bridge, the Longwood Historic District (NYCL), located partially within the Oak Point Yard APE, and the American Bank Note Company (S/NR-eligible, NYCL). However, the operation of the eastern termini of this alternative would be limited to the waterfront and in keeping with

the historic and current uses of the area as a working waterfront and would not be expected to adversely affect these architectural resources. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken as part of any future Tier II level documentation. No architectural resources are located in the Hunts Point APE and therefore no adverse effects on these resources could be expected.

Archaeological Resources

Any potential impacts from the Truck Float Alternative on archaeological resources would be limited to construction period impacts, discussed below.

Lift On-Lift Off (LOLO) Container Barge Alternative

Architectural Resources

West-of-Hudson APE

Potential effects from the operation of the LOLO Container Barge Alternative would be similar as those described under the Truck Ferry and Truck Float Alternatives above. Increased barge activity at the western termini of this alternative (Greenville Yard or Port Newark/Port Elizabeth) would be consistent with current and historic uses of the area as ports and waterfront freight handling facilities. Any new structures that would be added to operate this alternative (e.g., cranes) would be consistent with existing structures in the area and would not result in adverse effects on architectural resources within the west-of-Hudson (New Jersey) APE. Further analysis of this alternative would be undertaken as part of any future Tier II documentation.

East-of-Hudson APE

Red Hook, SBMT, 51st Street Yard, 65th Street Yard

The waterfront portion of the Brooklyn architectural resources APE (see **Figure 6.3-2**) is partially within the boundaries of the Brooklyn Army Terminal complex and the Bush Terminal Historic District. The operation of the eastern termini of this alternative would be in keeping with the historic and current uses of the area as a working waterfront and would not be expected to adversely affect these architectural resources. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken as part of any future Tier II level documentation.

Maspeth Yard

As shown in **Figure 6.3-4**, several S/NR-eligible architectural resources are located within Maspeth Yard portion of the APE; however, these are located far from the potential location of the terminus under this alternative in Maspeth Creek. Therefore, the operation of this alternative would not result in adverse effects on architectural resources. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken at part of any future Tier II level documentation.

Archaeological Resources

Any potential impacts from this alternative on archaeological resources would be limited to construction period impacts, discussed below.

Roll On-Roll Off (RORO) Container Barge Alternative

Architectural Resources

West-of-Hudson APE

As described in Chapter 4, "Alternatives," RORO container barges differ from LOLO container barges only in the manner in which the barges are loaded and unloaded. Instead of lifting containers onto and off of the vessel using cranes, trucks are used to drive containers mounted on chassis onto and off of the barge. Therefore, the potential effects from the operation of the RORO Container Barge Alternative would be similar as those described under the LOLO Container Barge Alternative above. Increased barge activity at the western termini of this alternative (Greenville Yard or Port Newark/Port Elizabeth) would be consistent with current and historic uses of the area as ports and waterfront freight handling facilities. Any new structures that would be added to operate this alternative (e.g., ramps or cranes) would be consistent with existing structures in the area and would not result in adverse effects on architectural resources within the west-of-Hudson (New Jersey) APE. Further analysis of this alternative would be undertaken as part of any future Tier II documentation.

East-of-Hudson APE

Red Hook, SBMT, 51st Street Yard, 65th Street Yard

The waterfront portion of the Brooklyn architectural resources APE (see **Figure 6.3-2**) is partially within the boundaries of the Brooklyn Army Terminal complex and the Bush Terminal Historic District. The operation of the eastern termini of this alternative would be in keeping with the historic and current uses of the area as a working waterfront and would not be expected to adversely affect these architectural resources. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken as part of any future Tier II level documentation.

Maspeth Yard

As shown in **Figure 6.3-4**, several S/NR-eligible architectural resources are located within Maspeth Yard portion of the APE; however, these are located far from the potential location of the terminus under this alternative in Maspeth Creek. Therefore, the operation of this alternative would not result in adverse effects on architectural resources. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken at part of any future Tier II level documentation.

Archaeological Resources

Any potential impacts from this alternative on archaeological resources would be limited to construction period impacts, discussed below.

RAIL TUNNEL ALTERNATIVES

Rail Tunnel Alternative

Architectural Resources

West-of-Hudson APE

As with the Enhanced Railcar Float Alternative, the Rail Tunnel Alternative would result in an increase in rail traffic on existing rail lines; however, increased train activity would not be inconsistent with the existing rail uses in the west-of-Hudson (New Jersey) APE. Therefore, the

alternative would not result in adverse contextual changes to the current or historic visual character of the rail lines in the west-of-Hudson APE.

The operation of the Rail Tunnel Alternative would utilize a tunnel portal in the vicinity of Greenville Yard. Any cut and cover portions of the tunnel would not be visible post-construction and any open cut portions would be located among existing rail facilities and largely within existing rail rights-of-way. The western tunnel ventilation shaft would be constructed over the tunnel alignment, near the waterfront and there is the potential that the ventilation shaft could affect portions of nearby historic districts.

East-of-Hudson APE

The Rail Tunnel Alternative would result in an increase in rail traffic on existing rail lines; however, increased train activity would not be inconsistent with the existing rail uses in the east-of-Hudson. Therefore, these alternatives would not result in adverse contextual changes to the current or historic visual character of the Bay Ridge Branch and nearby historic districts and resources.

The operation of the Rail Tunnel Alternative would utilize a tunnel portal on the Bay Ridge Branch at approximately 10th Avenue. Any cut and cover portions of the tunnel (between approximately 8th Avenue and the tunnel portal) would not be visible post-construction and any open cut portions would be located among existing rail facilities and largely within existing rail rights-of-way. The ventilation tunnel ventilation shaft would be constructed over the tunnel alignment, near the waterfront and there is the potential that the ventilation shaft could affect portions of nearby historic districts.

65th Street Yard

Under this alternative, 65th Street Yard, located near the boundaries of the Brooklyn Army Terminal complex and the Bush Terminal Historic District, would process carload freight moving to and from Brooklyn, parts of Queens, and southern Long Island. The operation of 65th Street Yard as a freight transfer facility would be in keeping with the historic and current uses of the area as a working waterfront and would not be expected to adversely affect these architectural resources. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken as part of any future Tier II level documentation.

East New York APE

The architectural resources identified within the East New York APE, which include the Pieter Wyckoff House (S/NR, NYCL) and Evergreens Cemetery (S/NR), could be indirectly adversely affected by the Rail Tunnel Alternative's rail traffic due to increased operational noise and vibration. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken at part of any future Tier II documentation.

Fresh Pond Yard APE, Maspeth Yard APE, the Montauk Branch

Several historic districts (S/NR) are located within the Fresh Pond Yard architectural resources APE and several S/NR-eligible architectural resources are also located within the Montauk Branch portion of the APE connecting the Fresh Pond Yards APE and the Maspeth Yard APE on the Fremont Secondary Line leading north from Fresh Pond. With the operation of the Rail Tunnel Alternative, these architectural resources may be indirectly adversely affected by rail traffic due to increased operational noise and vibration. Further analysis of potential adverse

operational effects to architectural resources with this alternative would be undertaken at part of any future Tier II level documentation.

Oak Point Yard and Hunts Point APE

Several architectural resources are located in the Oak Point Yard APE, including bridges and viaduct structures over Wards Island and Randall's Island, including the Hell Gate Bridge. Increased train activity on these bridges would be consistent with current and historic uses and would not be expected to result in adverse effects on these architectural resources. The Longwood Historic District (NYCL), located partially within the Oak Point Yard APE, and the American Bank Note Company (S/NR-eligible, NYCL) could experience indirect adverse effects from rail traffic due to increased noise and vibration. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken at part of any future Tier II level documentation.

No architectural resources are located in the Hunts Point APE and therefore no adverse effects on these resources could be expected.

Nassau/Suffolk Facilities

The S/NR eligible Pilgrim Psychiatric Center Historic District could be indirectly adversely affected by the Rail Tunnel Alternative's rail traffic due to increased operational noise and vibration. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken at part of any future Tier II documentation.

Archaeological Resources

Any potential impacts from this alternative on archaeological resources would be limited to construction period impacts, discussed below.

Rail Tunnel with Shuttle("Open Technology') Service Alternative

Architectural Resources

West-of-Hudson APE

As with the Rail Tunnel Alternative, the Rail Tunnel with Shuttle Service Alternative would result in an increase in rail traffic on existing rail lines, however, increased train activity would not be inconsistent with the existing rail uses in the west-of-Hudson (New Jersey) APE. Therefore, the alternative would not result in adverse contextual changes to the current or historic visual character of the rail lines in the west-of-Hudson APE. Since the location of the western terminus of this alternative is undetermined at this time (to be located outside of the Port District), potential effects from the operation of this terminus cannot be determined at this time.

The operation of this alternative would utilize a tunnel portal in the vicinity of Greenville Yard. Any cut and cover portions of the tunnel would not be visible post-construction and any open cut portions would be located among existing rail facilities and largely within existing rail rights-of-way. The western tunnel ventilation shaft would be constructed over the tunnel alignment, near the waterfront and there is the potential that the ventilation shaft could affect portions of nearby historic districts.

East-of-Hudson APE

The Rail Tunnel with Shuttle Service Alternative would result in an increase in rail traffic on existing rail lines; however, increased train activity would not be inconsistent with the existing rail uses in the east-of-Hudson. Therefore, these alternatives would not result in adverse

contextual changes to the current or historic visual character of the Bay Ridge Branch and nearby historic districts.

The operation of this alternative would utilize a tunnel portal on the Bay Ridge Branch at approximately 10th Avenue. Any cut and cover portions of the tunnel (between approximately 8th Avenue and the tunnel portal) would not be visible post-construction and any open cut portions would be located among existing rail facilities and largely within existing rail rights-of-way. The ventilation tunnel ventilation shaft would be constructed over the tunnel alignment, near the waterfront and there is the potential that the ventilation shaft could affect portions of nearby historic districts.

East New York APE

The architectural resources identified within the East New York APE, which include the Pieter Wyckoff House (S/NR, NYCL) and Evergreens Cemetery (S/NR), could be indirectly adversely affected by increased operational noise and vibration resulting from the rail traffic associated with this alternative. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken at part of any future Tier II documentation.

Fresh Pond Yard APE, Maspeth Yard APE, the Montauk Branch

Several historic districts (S/NR) are located within the Fresh Pond Yard architectural resources APE and several S/NR-eligible architectural resources are also located within the Montauk Branch portion of the APE connecting the Fresh Pond Yard APE and the Maspeth Yard APE on the Fremont Secondary Line leading north from Fresh Pond. With the operation of the Rail Tunnel with Shuttle Service Alternative, these architectural resources may be indirectly adversely affected by rail traffic due to increased operational noise and vibration. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken at part of any future Tier II level documentation.

Nassau/Suffolk Facilities

The S/NR eligible Pilgrim Psychiatric Center Historic District could be indirectly adversely affected by this alternative's rail traffic due to increased operational noise and vibration. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken at part of any future Tier II documentation.

Archaeological Resources

Any potential impacts from this alternative on archaeological resources would be limited to construction period impacts, discussed below.

Rail Tunnel with Chunnel Service Alternative

Architectural Resources

West-of-Hudson APE

As with the Rail Tunnel and the Rail Tunnel with Shuttle Service Alternatives, the Rail Tunnel with Chunnel Service Alternative would result in an increase in rail traffic on existing rail lines; however, increased train activity would not be inconsistent with the existing rail uses in the west-of-Hudson (New Jersey) APE. Therefore, the alternative would not result in adverse contextual changes to the current or historic visual character of the rail lines in the west-of-Hudson APE. Since the location of the western terminus of this alternative is undetermined at this time, potential effects from the operation of this terminus cannot be determined at this time.

The operation of this alternative would utilize a tunnel portal in the vicinity of Greenville Yard. Any cut and cover portions of the tunnel would not be visible post-construction and any open cut portions would be located among existing rail facilities and largely within existing rail rights-of-way. The western tunnel ventilation shaft would be constructed over the tunnel alignment, near the waterfront and there is the potential that the ventilation shaft could affect portions of nearby historic districts.

The western terminal of this alternative would be at Oak Island Yard, which would serve as a loading area for the chunnel trains. The operation of this alternative would be consistent with current and historic uses of the area as rail yards and freight handling facilities and would not result in adverse effects on architectural resources within the west-of-Hudson (New Jersey) APE. Further analysis of this alternative would be undertaken as part of any future Tier II documentation.

East-of-Hudson APE

The Rail Tunnel with Chunnel Service Alternative would result in an increase in rail traffic on existing rail lines; however, increased train activity would not be inconsistent with the existing rail uses in the east-of-Hudson. Therefore, these alternatives would not result in adverse contextual changes to the current or historic visual character of the Bay Ridge Branch and nearby historic districts.

The operation of this alternative would utilize a tunnel portal on the Bay Ridge Branch at approximately 10th Avenue. Any cut and cover portions of the tunnel (between approximately 8th Avenue and the tunnel portal) would not be visible post-construction and any open cut portions would be located among existing rail facilities and largely within existing rail rights-of-way. The ventilation tunnel ventilation shaft would be constructed over the tunnel alignment, near the waterfront and there is the potential that the ventilation shaft could affect portions of nearby historic districts.

East New York APE

East New York Yard would operate as the eastern terminus of the chunnel service under this alternative. The architectural resources identified within the East New York APE, which include the Pieter Wyckoff House (S/NR, NYCL) and Evergreens Cemetery (S/NR), could be indirectly adversely affected by increased operational noise and vibration resulting from the rail traffic and truck traffic associated with this alternative. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken at part of any future Tier II documentation.

Fresh Pond Yard APE, Maspeth Yard APE, the Montauk Branch

Several historic districts (S/NR) are located within the Fresh Pond Yard architectural resources APE and several S/NR-eligible architectural resources are also located within the Montauk Branch portion of the APE connecting the Fresh Pond Yards APE and the Maspeth Yard APE on the Fremont Secondary Line leading north from Fresh Pond. With the operation of the Rail Tunnel with Shuttle Service Alternative, these architectural resources may be indirectly adversely affected by rail traffic due to increased operational noise and vibration. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken at part of any future Tier II level documentation.

Nassau/Suffolk Facilities

The S/NR eligible Pilgrim Psychiatric Center Historic District could be indirectly adversely affected by this alternative's rail traffic due to increased operational noise and vibration. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken at part of any future Tier II documentation.

Archaeological Resources

Any potential impacts from this alternative on archaeological resources would be limited to construction period impacts, discussed below.

Rail Tunnel with Automated Guided Vehicle (AGV) Technology Alternative

Architectural Resources

West-of-Hudson APE

As with the Rail Tunnel and the Rail Tunnel with Shuttle Service Alternatives, the Rail Tunnel with Chunnel Service Alternative would result in an increase in rail traffic on existing rail lines; however, increased train activity would not be inconsistent with the existing rail uses in the west-of-Hudson (New Jersey) APE. Therefore, the alternative would not result in adverse contextual changes to the current or historic visual character of the rail lines in the west-of-Hudson APE. Since the location of the western terminus of this alternative is undetermined at this time, potential effects from the operation of this terminus cannot be determined at this time.

The operation of this alternative would utilize a tunnel portal in the vicinity of Greenville Yard. Any cut and cover portions of the tunnel would not be visible post-construction and any open cut portions would be located among existing rail facilities and largely within existing rail rights-of-way. The western tunnel ventilation shaft would be constructed over the tunnel alignment, near the waterfront and there is the potential that the ventilation shaft could affect portions of nearby historic districts.

The western terminal of this alternative would be at Greenville Yard, which would serve as an AGV staging area. The operation of this alternative would be consistent with current and historic uses of the area as rail yards and freight handling facilities and would not result in adverse effects on architectural resources within the west-of-Hudson (New Jersey) APE. Further analysis of this alternative would be undertaken as part of any future Tier II documentation.

East-of-Hudson APE

The Rail Tunnel with Chunnel Service Alternative would result in an increase in rail traffic on existing rail lines; however, increased train activity would not be inconsistent with the existing rail uses in the east-of-Hudson. Therefore, these alternatives would not result in adverse contextual changes to the current or historic visual character of the Bay Ridge Branch and nearby historic districts.

The operation of this alternative would utilize a tunnel portal on the Bay Ridge Branch at approximately 10th Avenue. Any cut and cover portions of the tunnel (between approximately 8th Avenue and the tunnel portal) would not be visible post-construction and any open cut portions would be located among existing rail facilities and largely within existing rail rights-of-way. The tunnel's ventilation shaft would be constructed over the tunnel alignment, near the waterfront and there is the potential that the ventilation shaft could affect portions of nearby historic districts.

East New York APE

East New York Yard would operate as the eastern terminus of the chunnel service under this alternative. The architectural resources identified within the East New York APE, which include the Pieter Wyckoff House (S/NR, NYCL) and Evergreens Cemetery (S/NR), could be indirectly adversely affected by increased operational noise and vibration resulting from the rail traffic and truck traffic associated with this alternative. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken at part of any future Tier II documentation.

Fresh Pond Yard APE, Maspeth Yard APE, the Montauk Branch

Several historic districts (S/NR) are located within the Fresh Pond Yard architectural resources APE and several S/NR-eligible architectural resources are also located within the Montauk Branch portion of the APE connecting the Fresh Pond Yards APE and the Maspeth Yard APE on the Fremont Secondary Line leading north from Fresh Pond. With the operation of the Rail Tunnel with Shuttle Service Alternative, these architectural resources may be indirectly adversely affected by rail traffic due to increased operational noise and vibration. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken at part of any future Tier II level documentation.

Nassau/Suffolk Facilities

The S/NR eligible Pilgrim Psychiatric Center Historic District could be indirectly adversely affected by this alternative's rail traffic due to increased operational noise and vibration. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken at part of any future Tier II documentation.

Archaeological Resources

Any potential impacts from this alternative on archaeological resources would be limited to construction period impacts, discussed below.

Rail Tunnel with Truck Access Alternative

Architectural Resources

West-of-Hudson APE

As with the aforementioned Rail Tunnel Alternatives, the Rail Tunnel with Truck Access Alternative would result in an increase in rail traffic on existing rail lines; however, increased train activity would not be inconsistent with the existing rail uses in the west-of-Hudson (New Jersey) APE. Therefore, the alternative would not result in adverse contextual changes to the current or historic visual character of the rail lines in the west-of-Hudson APE.

For the Rail Tunnel with Truck Access Alternative, it was assumed that trucks would enter near Exit 14B of the New Jersey Turnpike and would run through the tunnel to the Bay Ridge Branch. The operation of this alternative would utilize a tunnel portal in the vicinity of Greenville Yard. Any cut and cover portions of the tunnel would not be visible post-construction and any open cut portions would be located among existing rail facilities and largely within existing rail rights-of-way. The western tunnel ventilation shaft would be constructed over the tunnel alignment, near the waterfront and there is the potential that the ventilation shaft could affect portions of nearby historic districts.

East-of-Hudson APE

The Rail Tunnel with Truck Access Alternative would result in an increase in rail traffic on existing rail lines; however, increased train activity would not be inconsistent with the existing rail uses in the east-of-Hudson. Therefore, these alternatives would not result in adverse contextual changes to the current or historic visual character of the Bay Ridge Branch and nearby historic districts and resources.

The operation of this alternative, as with the other Rail Tunnel Alternatives, would utilize a tunnel portal on the Bay Ridge Branch at approximately 12th Avenue. Any cut and cover portions of the tunnel would not be visible post-construction and any open cut portions would be located among existing rail facilities and largely within existing rail rights-of-way. The ventilation tunnel ventilation shaft would be constructed over the tunnel alignment, near the waterfront and there is the potential that the ventilation shaft could affect portions of nearby historic districts.

65th Street Yard

Under this alternative, 65th Street Yard, located near the boundaries of the Brooklyn Army Terminal complex and the Bush Terminal Historic District, would process freight moving to and from Brooklyn, parts of Queens, and southern Long Island. The operation of 65th street yard as a freight transfer facility would be in keeping with the historic and current uses of the area as a working waterfront and would not be expected to adversely affect these architectural resources. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken as part of any future Tier II level documentation.

East New York APE

Under this alternative, the trucks traveling in the tunnel would continue in the Bay Ridge Branch rail right-of-way and terminate at Linden Boulevard. There were no architectural resources identified near the Bay Ridge Branch in the vicinity of Linder Boulevard, therefore no operational effects on cultural resources are expected in that portion of the APE. The architectural resources identified within the East New York APE, which include the Pieter Wyckoff House (S/NR, NYCL) and Evergreens Cemetery (S/NR), could be indirectly adversely affected by the alternative's rail traffic due to increased operational noise and vibration. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken at part of any future Tier II documentation.

Fresh Pond Yard APE, Maspeth Yard APE, the Montauk Branch

Several historic districts (S/NR) are located within the Fresh Pond Yard architectural resources APE and several S/NR-eligible architectural resources are also located within the Montauk Branch portion of the APE connecting the Fresh Pond Yards APE and the Maspeth Yard APE on the Fremont Secondary Line leading north from Fresh Pond. With the operation of this alternative, these architectural resources may be indirectly adversely affected by rail traffic due to increased operational noise and vibration. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken at part of any future Tier II level documentation.

Oak Point Yard and Hunts Point APE

Several architectural resources are located in the Oak Point Yard APE, including bridges and viaduct structures over Wards Island and Randall's Island, including the Hell Gate Bridge. Increased train activity on these bridges would be consistent with current and historic uses and

would not be expected to result in adverse effects on these architectural resources. The Longwood Historic District (NYCL), located partially within the Oak Point Yard APE, and the American Bank Note Company (S/NR-eligible, NYCL) could experience indirect adverse effects from rail traffic due to increased noise and vibration. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken at part of any future Tier II level documentation.

No architectural resources are located in the Hunts Point APE and therefore no adverse effects on these resources could be expected.

Nassau/Suffolk Facilities

The S/NR eligible Pilgrim Psychiatric Center Historic District could be indirectly adversely affected by this alternative's rail traffic due to increased operational noise and vibration. Further analysis of potential adverse operational effects to architectural resources with this alternative would be undertaken at part of any future Tier II documentation.

Archaeological Resources

Any potential impacts from this alternative on archaeological resources would be limited to construction period impacts, discussed below.

CONSTRUCTION EFFECTS

NO ACTION ALTERNATIVE

As described above, the No Action Alternative includes some undertakings that are part of the overall CHFP, such as improvements to Greenville Yard and 65th Street Yard; however, a separate set of environmental review processes have previously been completed for these improvements, with separate documentation approved by FHWA.

Construction activities related to other projects identified as part of the No Action Alternative are not part of the CHFP; however, these activities may affect archaeological resources in the study area.

WATERBORNE ALTERNATIVES

Enhanced Railcar Float Alternative

Architectural Resources

The expansion of existing facilities and construction of new facilities to support this alternative may include the construction of new track, internal roadways and other paved areas, new buildings for storage and maintenance, and various structures and equipment related to processing rail freight. The construction activities associated with this work would not be expected to adversely affect the character of the architectural resources located in the west-of-Hudson and east-of-Hudson APEs and would be in line with the industrial character of the existing facilities. Consequently, no adverse indirect effects would be expected to affect architectural resources located in the west-of-Hudson and east-of-Hudson APEs. Further analysis of the potential for the project to result in direct or indirect effects would be undertaken at any future Tier II documentation.

Archaeological Resources

West-of-Hudson APE

With the Enhanced Railcar Float Alternative, Greenville Yard will continue to serve as the western terminus of the railcar float operation. As noted previously, Greenville Yard was the

subject of a previous Phase IA Archaeological Documentary Study as part of the 2004 DEIS. Based on this previous archaeological study, which was approved by the NJHPO, the only archaeologically sensitive feature within the former study area was the Morris Canal. The Morris Canal is within a small area of the western portion of the Greenville Yard APE for the current project. Therefore, the construction of all project alternatives, including the Enhanced Railcar Float Alternative, in Greenville Yard has the potential to affect this historic-period archaeological resource.

East-of-Hudson APE

Both Brooklyn yards (at 51st Street and 65th Street) and Oak Point Yard in the Bronx, could serve as the east-of-Hudson crossing termini for this alternative. East-of-Hudson supporting freight facilities needed to fully meet the demand for this alternative would include Fresh Pond Yard, Maspeth Yard, Oak Point Yard, and existing and/or proposed facilities on Long Island.

Potential impacts from the construction of this alternative are presented below for those facilities that have been subject to previous archaeological studies and where information about potential resources is available. The other sections of the study area have not been the subject of previous archaeological studies. While portions of these APEs were likely the subject of previous ground disturbance as a result of transportation infrastructure construction and maintenance, additional archaeological evaluation may be necessary to determine whether areas of archaeological sensitivity may exist within these areas. Consultation with NYSHPO would be undertaken as part of any future Tier II documentation.

The previous Phase IA study for 65th Street Yard in Brooklyn analyzed an area comprising the southern half of the yard including the entirety of the linear portion of APE between the 65th Street Yard and 9th Avenue. The Phase IA Study concluded that a portion of the area studied was sensitive for late 19th century industrial or transportation-related archaeological resources. If project-related construction were to occur in the sensitive area, Phase IB archaeological testing would be recommended in order to confirm the presence or absence of archaeological resources in the APE. Furthermore, a supplemental archaeological documentary study would likely be required to assess the archaeological sensitivity of the portion of 65th Street Yard not subject to previous study. Therefore, NYSHPO would be consulted as part of any Tier II analysis conducted in the future.

Fresh Pond Yard in Queens was evaluated in 2000 for a prior project. The APE was determined to have no prehistoric or historic period archaeological sensitivity based on soil borings and prior site disturbance. NYSHPO concurred with these findings. Therefore, project-related construction activities would not affect archaeological resources in Fresh Pond Yard.

The Phase IA conducted for Maspeth Yard in 2002, as part of the 2004 DEIS, concluded that the majority of the APE is sensitive for historic and prehistoric period archaeological resources. The only portion of the APE that was determined to lack sensitivity was the Phelps Dodge site, which occupies portions of Blocks 2529 and 2554 and is encompassed within the current project APE. The area most likely to contain intact archaeological deposits is the southeastern portion of Block 2575, located north of Maspeth Avenue and west of Rust Road, a portion of which is included in the current project APE. This area was historically characterized by a rise in topography and therefore may have hosted Native American habitation. The same area was the location of the Way-Mott Farmstead, the circa 1819 Garritt Furman Mansion, and the Way-Mott Cemetery. Thirteen burials were reportedly moved from the Way-Mott Cemetery to Prospect Park in 1950. The Phase IA Assessment recommended that Phase IB archaeological testing be

performed in this area to determine the presence or absence of archaeological resources associated with the Native American habitation of Maspeth, the Way-Mott Farmstead, the Garritt Furman Mansion, and the Way-Mott Cemetery.

Truck Ferry Alternative

Architectural Resources

The expansion of existing facilities and construction of new facilities to support this alternative may include the construction of internal roadways and other paved areas, access ramps, new buildings for storage and maintenance, and various structures and equipment related to processing freight. The construction activities associated with this work would not be expected to adversely affect the character of the architectural resources located in the west-of-Hudson and east-of-Hudson APEs and would be in line with the industrial character of the existing facilities. Consequently, no adverse indirect effects would be expected to affect architectural resources located in the west-of-Hudson and east-of-Hudson APEs. Further analysis of the potential for the project to result in direct or indirect effects would be undertaken at any future Tier II documentation.

Archaeological Resources

West-of-Hudson APE

The western terminus of this alternative would be at Port Newark/Port Elizabeth. As noted previously, the Port Newark/Port Elizabeth potential terminus has not been the subject of previous archaeological studies; however, because this location has been the subject of previous ground disturbance as a result of transportation infrastructure construction and maintenance, additional archaeological evaluation may be not necessary to determine whether areas of archaeological sensitivity may exist within these areas. Consultation with NYSHPO would be undertaken as part of any future Tier II documentation to confirm.

East-of-Hudson APE

The eastern termini of this alternative may comprise 65th Street Yard, 51st Street Yard, South Brooklyn Marine Terminal, Oak Point, or Hunts Point. Out of these, only 65th Street Yard has been the subject of previous archaeological study. For that location, if project-related construction were to occur in the portion of 65th Street Yard sensitive for late 19th century industrial or transportation-related archaeological resource, Phase IB archaeological testing would be recommended in order to confirm the presence or absence of archaeological resources in the APE. Furthermore, a supplemental archaeological documentary study would likely be required to assess the archaeological sensitivity of the portion of 65th Street Yard not subject to previous study. Therefore, NYSHPO would be consulted as part of any Tier II analysis conducted in the future.

The other sections of the study area have not been the subject of previous archaeological studies. While portions of these APEs were likely the subject of previous ground disturbance as a result of transportation infrastructure construction and maintenance, additional archaeological evaluation may be necessary to determine whether areas of archaeological sensitivity may exist within these areas. Consultation with NYSHPO would be undertaken as part of any future Tier II documentation.

Truck Float Alternative

Architectural Resources

The expansion of existing facilities and construction of new facilities to support this alternative may include the construction of internal roadways and other paved areas, access ramps, new buildings for storage and maintenance, and various structures and equipment related to processing freight. The construction activities associated with this work would not be expected to adversely affect the character of the architectural resources located in the west-of-Hudson and east-of-Hudson APEs and would be in line with the industrial character of the existing facilities. Consequently, no adverse indirect effects would be expected to affect architectural resources located in the west-of-Hudson and east-of-Hudson APEs. Further analysis of the potential for the project to result in direct or indirect effects would be undertaken at any future Tier II documentation.

Archaeological Resources

West-of-Hudson APE

Potential construction impacts from this alternative would be identical to the Truck Ferry Alternative described above. The western terminus of this alternative, Port Newark/Port Elizabeth, has not been the subject of previous archaeological studies; however, because this location has been the subject of previous ground disturbance as a result of transportation infrastructure construction and maintenance, additional archaeological evaluation may be not necessary to determine whether areas of archaeological sensitivity may exist within these areas. Consultation with NYSHPO would be undertaken as part of any future Tier II documentation to confirm.

East-of-Hudson APE

The eastern termini of this alternative may comprise 65th Street Yard, 51st Street Yard, South Brooklyn Marine Terminal, Oak Point, or Hunts Point. Out of these, only 65th Street Yard has been the subject of previous archaeological study. For that location, if project-related construction were to occur in the portion of 65th Street Yard sensitive for late 19th century industrial or transportation-related archaeological resource, Phase IB archaeological testing would be recommended in order to confirm the presence or absence of archaeological resources in the APE. Furthermore, a supplemental archaeological documentary study would likely be required to assess the archaeological sensitivity of the portion of 65th Street Yard not subject to previous study. Therefore, NYSHPO would be consulted as part of any Tier II analysis conducted in the future.

The other sections of the study area have not been the subject of previous archaeological studies. While portions of these APEs were likely the subject of previous ground disturbance as a result of transportation infrastructure construction and maintenance, additional archaeological evaluation may be necessary to determine whether areas of archaeological sensitivity may exist within these areas. Consultation with NYSHPO would be undertaken as part of any future Tier II documentation.

Lift On-Lift Off (LOLO) Container Barge Alternative

Architectural Resources

The expansion of existing facilities and construction of new facilities to support this alternative may include the construction of internal roadways and other paved areas, access ramps, new buildings for storage and maintenance, and various structures and equipment related to

processing freight. The construction activities associated with this work would not be expected to adversely affect the character of the architectural resources located in the west-of-Hudson and east-of-Hudson APEs and would be in line with the industrial character of the existing facilities. Consequently, no adverse indirect effects would be expected to affect architectural resources located in the west-of-Hudson and east-of-Hudson APEs. Further analysis of the potential for the project to result in direct or indirect effects would be undertaken at any future Tier II documentation.

Archaeological Resources

The alternative analyzed in the EIS would provide barge service for international containerized cargo between Port Newark/Port Elizabeth or Greenville Yard, and SBMT, 65th Street Yard, 51st Street Yard, Red Hook Container Terminal, or Maspeth Yard, in New York. With the exception of Greenville Yard and 65th Street Yard, the study area has not been the subject of previous archaeological studies. While portions of these APEs were likely the subject of previous ground disturbance as a result of transportation infrastructure construction and maintenance, additional archaeological evaluation may be necessary to determine whether areas of archaeological sensitivity may exist within these areas. Consultation with NYSHPO would be undertaken as part of any future Tier II documentation.

West-of-Hudson APE

For Greenville Yard, potential construction impacts from this alternative are similar to the alternatives described above. As noted previously, Greenville Yard was the subject of a previous Phase IA Archaeological Documentary Study as part of the 2004 DEIS. Based on this previous archaeological study, which was approved by the NJHPO, the only archaeologically sensitive feature within the former study area was the Morris Canal. The Morris Canal is within a small area of the western portion of the Greenville Yard APE for the current project. Therefore, the construction of all project Build Alternatives, including the Waterborne Alternatives, in Greenville Yard has the potential to affect this historic-period archaeological resource.

East-of-Hudson APE

Similarly, if project-related construction were to occur in the portion of 65th Street Yard sensitive for late 19th century industrial or transportation-related archaeological resource, Phase IB archaeological testing would be recommended in order to confirm the presence or absence of archaeological resources in the APE. Furthermore, a supplemental archaeological documentary study would likely be required to assess the archaeological sensitivity of the portion of 65th Street Yard not subject to previous study. Therefore, NYSHPO would be consulted as part of any Tier II analysis conducted in the future.

Roll On-Roll Off (RORO) Container Barge Alternative

Architectural Resources

The expansion of existing facilities and construction of new facilities to support this alternative may include the construction of new track, internal roadways and other paved areas, access ramps, new buildings for storage and maintenance, and various structures and equipment related to processing rail freight. The construction activities associated with this work would not be expected to adversely affect the character of the architectural resources located in the west-of-Hudson and east-of-Hudson APEs and would be in line with the industrial character of the existing facilities. Consequently, no adverse indirect effects would be expected to affect architectural resources located in the west-of-Hudson and east-of-Hudson APEs. Further

analysis of the potential for the project to result in direct or indirect effects would be undertaken at any future Tier II documentation.

Archaeological Resources

The alternative analyzed in the EIS would provide barge service for international containerized cargo between Port Newark/Port Elizabeth or Greenville Yard, and SBMT, 65th Street Yard, 51st Street Yard, Red Hook Container Terminal, or Maspeth Yard, in New York. Potential impacts that may result from this alternative are nearly identical to the LOLO Container Barge Alternative discussed above.

With the exception of Greenville Yard and 65th Street Yard, the study area has not been the subject of previous archaeological studies. While portions of these APEs were likely the subject of previous ground disturbance as a result of transportation infrastructure construction and maintenance, additional archaeological evaluation may be necessary to determine whether areas of archaeological sensitivity may exist within these areas. Consultation with NYSHPO would be undertaken as part of any future Tier II documentation.

West-of-Hudson APE

For Greenville Yard, potential construction impacts from this alternative are similar to the alternatives described above. As noted previously, Greenville Yard was the subject of a previous Phase IA Archaeological Documentary Study as part of the 2004 DEIS. Based on this previous archaeological study, which was approved by the NJHPO, the only archaeologically sensitive feature within the former study area was the Morris Canal. The Morris Canal is within a small area of the western portion of the Greenville Yard APE for the current project. Therefore, the construction of all project Build Alternatives, including the Waterborne Alternatives, in Greenville Yard has the potential to affect this historic-period archaeological resource.

East-of-Hudson APE

Similarly, if project-related construction were to occur in the portion of 65th Street Yard sensitive for late 19th century industrial or transportation-related archaeological resource, Phase IB archaeological testing would be recommended in order to confirm the presence or absence of archaeological resources in the APE. Furthermore, a supplemental archaeological documentary study would likely be required to assess the archaeological sensitivity of the portion of 65th Street Yard not subject to previous study. Therefore, NYSHPO would be consulted as part of any Tier II analysis conducted in the future.

RAIL TUNNEL ALTERNATIVES

Rail Tunnel Alternative

Architectural Resources

The Rail Tunnel Alternative would provide a rail crossing from Greenville Yard to the LIRR's Bay Ridge Branch. To support this crossing, this and the other Rail Tunnel Alternatives would require the construction of support facilities, much like those described above for the Waterborne Alternatives, with the same potential construction period effects. The construction activities associated with this work would not be expected to adversely affect the character of the architectural resources located in the west-of-Hudson and east-of-Hudson APEs and would be in line with the industrial character of the existing facilities. Consequently, no adverse indirect effects would be expected to affect architectural resources located in the west-of-Hudson and east-of-Hudson APEs. Further analysis of the potential for the project to result in direct or indirect effects would be undertaken at any future Tier II documentation.

The Rail Tunnel Alternative would require the construction of a tunnel across New York Harbor and associated tunnel structures, such as tunnel portals and ventilation shafts. The portal in New Jersey would be located to the south of the Greenville Yard. The construction of the tunnel near Greenville Yard, within the west-of-Hudson APE, would have a physical effect on the Greenville Yard Historic District, since the tunnel construction would be located within the historic district boundaries. As mentioned previously, the Greenville Yard Lift Bridge has been demolished and, therefore, no adverse effects from ground-borne construction-period vibrations on this architectural resource would occur. Within the east-of-Hudson APE, construction of the tunnel and tunnel portal would take place far below ground and no vibration effects would be expected to adversely affect the architectural resources within the east-of-Hudson APE. Further analysis of the potential for the project to result in direct or indirect effects should be undertaken at any future Tier II documentation.

Archaeological Resources

West-of-Hudson APE

In addition to the potential effects identified above under the Waterborne Alternatives, portions of Greenville Yard that may be affected by the construction of this alternative were not analyzed in the 2001 Phase IA. A supplemental archaeological documentary study would likely be required to assess the archaeological sensitivity of this area. Consultation with NJHPO would be undertaken as part of any future Tier II documentation. In addition to the potential effects identified above under the Waterborne Alternatives, the New Jersey portion of the tunnel alignment may affect an area charted as potentially containing shipwrecks, located off Greenville Yard. It is also possible that uncharted shipwrecks may be located in this area. Potential effects depend on the exact alignment of the Rail Tunnel Alternatives and tunnel construction technology. Once detailed design is available and the specific area of potential effect is defined, additional investigations may be undertaken in consultation with New York and New Jersey SHPOs.

East-of-Hudson APE

In the east-of-Hudson portion of the APE, the construction of the eastern tunnel portal would take place between 8th and 13th Avenues along the Bay Ridge Branch right-of-way. The tunnel would be bored under the harbor until approximately 8th Avenue, constructed using cut and cover unto approximately 10th Avenue, and then travel in a cut until it came to grade at approximately 13th Avenue. The previous Phase IA study for 65th Street Yard in Brooklyn analyzed an area comprising the southern half of the yard including the entirety of the linear portion of APE between the 65th Street Yard and 9th Avenue. The Phase IA Study concluded that a portion of the area studied was sensitive for late 19th century industrial or transportation-related archaeological resources. If project-related construction were to occur in the sensitive area, Phase IB archaeological testing would be recommended in order to confirm the presence or absence of archaeological resources in the APE. Furthermore, a supplemental archaeological documentary study would likely be required to assess the archaeological sensitivity of the portion of 65th Street Yard not subject to previous study. Therefore, NYSHPO would be consulted as part of any Tier II analysis conducted in the future.

Fresh Pond Yard in Queens was evaluated in 2000 for a prior project. The APE was determined to have no prehistoric or historic period archaeological sensitivity based on soil borings and prior site disturbance. NYSHPO concurred with these findings. Therefore, project-related construction activities would not affect archaeological resources in Fresh Pond Yard.

The Phase IA conducted for Maspeth Yard in 2002, as part of the 2004 DEIS, concluded that the majority of the APE is sensitive for historic and prehistoric period archaeological resources. The only portion of the APE that was determined to lack sensitivity was the Phelps Dodge site, which occupies portions of Blocks 2529 and 2554 and is encompassed within the current project APE. The area most likely to contain intact archaeological deposits is the southeastern portion of Block 2575, located north of Maspeth Avenue and west of Rust Road, a portion of which is included in the current project APE. This area was historically characterized by a rise in topography and therefore may have hosted Native American habitation. The same area was the location of the Way-Mott Farmstead, the circa 1819 Garritt Furman Mansion, and the Way-Mott Cemetery. Thirteen burials were reportedly moved from the Way-Mott Cemetery to Prospect Park in 1950. The Phase IA Assessment recommended that Phase IB archaeological testing be performed in this area to determine the presence or absence of archaeological resources associated with the Native American habitation of Maspeth, the Way-Mott Farmstead, the Garritt Furman Mansion, and the Way-Mott Cemetery.

Other portions of the study area have not yet been analyzed for potential archaeological sensitivity. Any areas identified in archaeological documentary studies as being archaeologically sensitive that may be directly impacted by the proposed project would require further archaeological study (Phase IB field investigation) in order to determine the presence or absence of potentially significant (S/NR-eligible) archaeological resources. If any such Phase IB investigations result in the identification of potentially significant resources, a Phase II archaeological investigation would be required to determine their significance. If any unavoidable adverse effects to S/NR-eligible archaeological resources would occur as part of the proposed project, measures to minimize and/or mitigate these effects would be identified by the lead agency and the project sponsors in consultation with appropriate SHPOs, tribal organizations, and other consulting parties.

Rail Tunnel with Shuttle ("Open Technology') Service Alternative

Architectural Resources

As described in Chapter 4, "Alternatives," this service would be provided between termini that would be constructed in the west-of-Hudson region, such as one of the existing freight facilities in Pennsylvania, outside of the Port District, and in Maspeth Yard, in Queens or at a Long Island Facility (also outside of the Port District). The exact location of the western terminus of this alternative (outside of the jurisdiction of the Port Authority in the Port District) has not been determined; therefore, potential effects from the construction of this terminus cannot be determined at this time.

This and the other Rail Tunnel Alternatives would require the construction of support facilities, much like those described above for the Waterborne Alternatives, with the same potential construction period effects. The construction activities associated with this work would not be expected to adversely affect the character of the architectural resources located in the west-of-Hudson and east-of-Hudson APEs and would be in line with the industrial character of the existing facilities. Consequently, no adverse indirect effects would be expected to affect architectural resources located in the west-of-Hudson and east-of-Hudson APEs. Further analysis of the potential for the project to result in direct or indirect effects would be undertaken at any future Tier II documentation.

As with the Rail Tunnel Alternative, this alternative would require the construction of a tunnel across New York Harbor and associated tunnel structures, such as tunnel portals and ventilation shafts. The portal in New Jersey would be located to the south of the Greenville Yard. The

construction of the tunnel near Greenville Yard, within the west-of-Hudson APE, would have a physical effect on the Greenville Yard Historic District, since the tunnel construction would be located within the historic district boundaries. As mentioned previously, the Greenville Yard Lift Bridge has been demolished and therefore, no adverse effects from ground-borne construction-period vibrations on this architectural resource would occur. Within the east-of-Hudson APE, construction of the tunnel and tunnel portal would take place far below ground and no vibration effects would be expected to adversely affect the architectural resources within the east-of-Hudson APE. Further analysis of the potential for the project to result in direct or indirect effects should be undertaken at any future Tier II documentation.

Archaeological Resources

West-of-Hudson APE

Portions of Greenville Yard that may be affected by the construction of the tunnel portal under this alternative were not analyzed in the 2001 Phase IA. A supplemental archaeological documentary study would likely be required to assess the archaeological sensitivity of this area. Consultation with NJHPO would be undertaken as part of any future Tier II documentation. In addition to the potential effects identified above under the Waterborne Alternatives, the New Jersey portion of the tunnel alignment may affect an area charted as potentially containing shipwrecks, located off Greenville Yard. It is also possible that uncharted shipwrecks may be located in this area. Potential effects depend on the exact alignment of the Rail Tunnel Alternatives and tunnel construction technology. Once detailed design is available and the specific area of potential effect is defined, additional investigations may be undertaken in consultation with New York and New Jersey SHPOs.

East-of-Hudson APE

As discussed under the Rail Tunnel Alternative, the Phase IA Study concluded that a portion of the area studied was sensitive for late 19th century industrial or transportation-related archaeological resources. If project-related construction were to occur in the sensitive area, Phase IB archaeological testing would be recommended in order to confirm the presence or absence of archaeological resources in the APE. Furthermore, a supplemental archaeological documentary study would likely be required to assess the archaeological sensitivity of the portion of 65th Street Yard not subject to previous study. Therefore, NYSHPO would be consulted as part of any Tier II analysis conducted in the future.

Fresh Pond Yard in Queens was evaluated in 2000 for a prior project. The APE was determined to have no prehistoric or historic period archaeological sensitivity based on soil borings and prior site disturbance. NYSHPO concurred with these findings. Therefore, project-related construction activities would not affect archaeological resources in Fresh Pond Yard.

The Phase IA conducted for Maspeth Yard in 2002, as part of the 2004 DEIS, concluded that the majority of the APE is sensitive for historic and prehistoric period archaeological resources. The only portion of the APE that was determined to lack sensitivity was the Phelps Dodge site, which occupies portions of Blocks 2529 and 2554 and is encompassed within the current project APE. The area most likely to contain intact archaeological deposits is the southeastern portion of Block 2575, located north of Maspeth Avenue and west of Rust Road, a portion of which is included in the current project APE. This area was historically characterized by a rise in topography and therefore may have hosted Native American habitation. The same area was the location of the Way-Mott Farmstead, the circa 1819 Garritt Furman Mansion, and the Way-Mott Cemetery. Thirteen burials were reportedly moved from the Way-Mott Cemetery to Prospect

Park in 1950. The Phase IA Assessment recommended that Phase IB archaeological testing be performed in this area to determine the presence or absence of archaeological resources associated with the Native American habitation of Maspeth, the Way-Mott Farmstead, the Garritt Furman Mansion, and the Way-Mott Cemetery.

Other portions of the study area have not yet been analyzed for potential archaeological sensitivity. Any areas identified in archaeological documentary studies as being archaeologically sensitive that may be directly impacted by the proposed project would require further archaeological study (Phase IB field investigation) in order to determine the presence or absence of potentially significant (S/NR-eligible) archaeological resources. If any such Phase IB investigations result in the identification of potentially significant resources, a Phase II archaeological investigation would be required to determine their significance. If any unavoidable adverse effects to S/NR-eligible archaeological resources would occur as part of the proposed project, measures to minimize and/or mitigate these effects would be identified by the lead agency and the project sponsors in consultation with appropriate SHPOs, tribal organizations, and other consulting parties.

Rail Tunnel with Chunnel Service Alternative

Architectural Resources

The two termini of this alternative would be located at the Oak Island Yard in New Jersey and East New York Yard in Brooklyn. In addition, this and the other Rail Tunnel Alternatives would require the construction of support facilities, much like those described above for the Waterborne Alternatives, with the same potential construction period effects. The construction activities associated with this work would not be expected to adversely affect the character of the architectural resources located in the west-of-Hudson and east-of-Hudson APEs and would be in line with the industrial character of the existing facilities. Consequently, no adverse indirect effects would be expected to affect architectural resources located in the west-of-Hudson and east-of-Hudson APEs. Further analysis of the potential for the project to result in direct or indirect effects would be undertaken at any future Tier II documentation.

As with the Rail Tunnel Alternative, this alternative would require the construction of a tunnel across New York Harbor and associated tunnel structures, such as tunnel portals and ventilation shafts. The portal in New Jersey would be located to the south of the Greenville Yard. The construction of the tunnel near Greenville Yard, within the west-of-Hudson APE, would have a physical effect on the Greenville Yard Historic District, since the tunnel construction would be located within the historic district boundaries. As mentioned previously, the Greenville Yard Lift Bridge has been demolished and therefore, no adverse effects from ground-borne construction-period vibrations on this architectural resource would occur. Within the east-of-Hudson APE, construction of the tunnel and tunnel portal would take place far below ground and no vibration effects would be expected to adversely affect the architectural resources within the east-of-Hudson APE. Further analysis of the potential for the project to result in direct or indirect effects should be undertaken at any future Tier II documentation.

Archaeological Resources

West-of-Hudson APE

As part of this alternative, a truck loading and queuing area would be constructed in Oak Island Yard, the western terminus of this alternative, to allow trucks to board and alight from the specialized chunnel trains. Oak Island Yard has not yet been analyzed for potential

archaeological sensitivity and archaeological documentary study would be required in Tier II to begin evaluating potential impacts on this portion of the APE.

Portions of Greenville Yard that may be affected by the construction of this alternative were not analyzed in the 2001 Phase IA. A supplemental archaeological documentary study would likely be required to assess the archaeological sensitivity of this area. Consultation with NJHPO would be undertaken as part of any future Tier II documentation. In addition to the potential effects identified above under the Waterborne Alternatives, the New Jersey portion of the tunnel alignment may affect an area charted as potentially containing shipwrecks, located off Greenville Yard. It is also possible that uncharted shipwrecks may be located in this area. Potential effects depend on the exact alignment of the Rail Tunnel Alternatives and tunnel construction technology. Once detailed design is available and the specific area of potential effect is defined, additional investigations may be undertaken in consultation with New York and New Jersey SHPOs.

East-of-Hudson APE

As discussed under the Rail Tunnel Alternative, the Phase IA Study conducted for this portion of the APE concluded that a portion of the area studied was sensitive for late 19th century industrial or transportation-related archaeological resources. If project-related construction were to occur in the sensitive area, Phase IB archaeological testing would be recommended in order to confirm the presence or absence of archaeological resources in the APE. Furthermore, a supplemental archaeological documentary study would likely be required to assess the archaeological sensitivity of the portion of 65th Street Yard not subject to previous study. Therefore, NYSHPO would be consulted as part of any Tier II analysis conducted in the future.

As part of this alternative, a truck loading and queuing area would be constructed in East New York as the eastern terminus of this alternative, to allow trucks to board and alight from the specialized chunnel trains. As mentioned throughout, and as described below, East New York has not yet been analyzed for potential archaeological sensitivity and archaeological documentary study would be required in any Tier II documentation to begin evaluating potential impacts on this portion of the APE.

Fresh Pond Yard in Queens was evaluated in 2000 for a prior project. The APE was determined to have no prehistoric or historic period archaeological sensitivity based on soil borings and prior site disturbance. NYSHPO concurred with these findings. Therefore, project-related construction activities would not affect archaeological resources in Fresh Pond Yard.

The Phase IA conducted for Maspeth Yard in 2002, as part of the 2004 DEIS, concluded that the majority of the APE is sensitive for historic and prehistoric period archaeological resources. The only portion of the APE that was determined to lack sensitivity was the Phelps Dodge site, which occupies portions of Blocks 2529 and 2554 and is encompassed within the current project APE. The area most likely to contain intact archaeological deposits is the southeastern portion of Block 2575, located north of Maspeth Avenue and west of Rust Road, a portion of which is included in the current project APE. This area was historically characterized by a rise in topography and therefore may have hosted Native American habitation. The same area was the location of the Way-Mott Farmstead, the circa 1819 Garritt Furman Mansion, and the Way-Mott Cemetery. Thirteen burials were reportedly moved from the Way-Mott Cemetery to Prospect Park in 1950. The Phase IA Assessment recommended that Phase IB archaeological testing be performed in this area to determine the presence or absence of archaeological resources

associated with the Native American habitation of Maspeth, the Way-Mott Farmstead, the Garritt Furman Mansion, and the Way-Mott Cemetery.

Other portions of the study area have not yet been analyzed for potential archaeological sensitivity. Any areas identified in archaeological documentary studies as being archaeologically sensitive that may be directly impacted by the proposed project would require further archaeological study (Phase IB field investigation) in order to determine the presence or absence of potentially significant (S/NR-eligible) archaeological resources. If any such Phase IB investigations result in the identification of potentially significant resources, a Phase II archaeological investigation would be required to determine their significance. If any unavoidable adverse effects to S/NR-eligible archaeological resources would occur as part of the proposed project, measures to minimize and/or mitigate these effects would be identified by the lead agency and the project sponsors in consultation with appropriate SHPOs, tribal organizations, and other consulting parties.

Rail Tunnel with Automated Guided Vehicle (AGV) Technology Alternative

Architectural Resources

The AGV terminals under this alternative would be constructed in Greenville Yard and East New York. In addition, this and other rail tunnel alternatives would require the construction of support facilities, much like those described above, with the same potential construction period effects. The construction activities associated with this work would not be expected to adversely affect the character of the architectural resources located in the west-of-Hudson and east-of-Hudson APEs and would be in line with the industrial character of the existing facilities. Consequently, no adverse indirect effects would be expected to affect architectural resources located in the west-of-Hudson and east-of-Hudson APEs. Further analysis of the potential for the project to result in direct or indirect effects would be undertaken at any future Tier II documentation.

In addition to construction-related activities and potential effects identified above, the Rail Tunnel Alternative would require the construction of a tunnel across New York Harbor and associated tunnel structures, such as tunnel portals and ventilation shafts. The portal in New Jersey would be located to the south of the Greenville Yard. The construction of the tunnel near Greenville Yard, within the west-of-Hudson APE, would have a physical effect on the Greenville Yard Historic District, since the tunnel construction would be located within the historic district boundaries. As mentioned previously, the Greenville Yard Lift Bridge has been demolished and therefore, no adverse effects from ground-borne construction-period vibrations on this architectural resource would occur. Within the east-of-Hudson APE, construction of the tunnel and tunnel portal would take place far below ground and no vibration effects would be expected to adversely affect the architectural resources within the east-of-Hudson APE. Further analysis of the potential for the project to result in direct or indirect effects should be undertaken at any future Tier II documentation.

Archaeological Resources

West-of-Hudson APE

Portions of Greenville Yard that may be affected by the construction of this alternative were not analyzed in the 2001 Phase IA. A supplemental archaeological documentary study would likely be required to assess the archaeological sensitivity of this area. Consultation with NJHPO would be undertaken as part of any future Tier II documentation. In addition to the potential effects identified above under the Waterborne Alternatives, the New Jersey portion of the tunnel

alignment may affect an area charted as potentially containing shipwrecks, located off Greenville Yard. It is also possible that uncharted shipwrecks may be located in this area. Potential effects depend on the exact alignment of the Rail Tunnel Alternatives and tunnel construction technology. Once detailed design is available and the specific area of potential effect is defined, additional investigations may be undertaken in consultation with New York and New Jersey SHPOs.

East-of-Hudson APE

As discussed under the Rail Tunnel Alternative, the Phase IA Study concluded that a portion of the area studied was sensitive for late 19th century industrial or transportation-related archaeological resources. If project-related construction were to occur in the sensitive area, Phase IB archaeological testing would be recommended in order to confirm the presence or absence of archaeological resources in the APE. Furthermore, a supplemental archaeological documentary study would likely be required to assess the archaeological sensitivity of the portion of 65th Street Yard not subject to previous study. Therefore, NYSHPO would be consulted as part of any Tier II analysis conducted in the future.

As part of this alternative, an AGV terminal would be constructed in East New York as the eastern terminus of this alternative. As mentioned throughout, and as described below, East New York Yard has not yet been analyzed for potential archaeological sensitivity and archaeological documentary study would be required in any future Tier II documentation to begin evaluating potential impacts on this portion of the APE.

Fresh Pond Yard in Queens was evaluated in 2000 for a prior project. The APE was determined to have no prehistoric or historic period archaeological sensitivity based on soil borings and prior site disturbance. NYSHPO concurred with these findings. Therefore, project-related construction activities would not affect archaeological resources in Fresh Pond Yard.

The Phase IA conducted for Maspeth Yard in 2002, as part of the 2004 DEIS, concluded that the majority of the APE is sensitive for historic and prehistoric period archaeological resources. The only portion of the APE that was determined to lack sensitivity was the Phelps Dodge site, which occupies portions of Blocks 2529 and 2554 and is encompassed within the current project APE. The area most likely to contain intact archaeological deposits is the southeastern portion of Block 2575, located north of Maspeth Avenue and west of Rust Road, a portion of which is included in the current project APE. This area was historically characterized by a rise in topography and therefore may have hosted Native American habitation. The same area was the location of the Way-Mott Farmstead, the circa 1819 Garritt Furman Mansion, and the Way-Mott Cemetery. Thirteen burials were reportedly moved from the Way-Mott Cemetery to Prospect Park in 1950. The Phase IA Assessment recommended that Phase IB archaeological testing be performed in this area to determine the presence or absence of archaeological resources associated with the Native American habitation of Maspeth, the Way-Mott Farmstead, the Garritt Furman Mansion, and the Way-Mott Cemetery.

Other portions of the study area have not yet been analyzed for potential archaeological sensitivity. Any areas identified in archaeological documentary studies as being archaeologically sensitive that may be directly impacted by the proposed project would require further archaeological study (Phase IB field investigation) in order to determine the presence or absence of potentially significant (S/NR-eligible) archaeological resources. If any such Phase IB investigations result in the identification of potentially significant resources, a Phase II archaeological investigation would be required to determine their significance. If any

unavoidable adverse effects to S/NR-eligible archaeological resources would occur as part of the proposed project, measures to minimize and/or mitigate these effects would be identified by the lead agency and the project sponsors in consultation with appropriate SHPOs, tribal organizations, and other consulting parties.

Rail Tunnel with Truck Access Alternative

Architectural Resources

This and the other Rail Tunnel Alternatives would require the construction of support facilities, much like those described above, with the same potential construction period effects. The construction activities associated with this work would not be expected to adversely affect the character of the architectural resources located in the west-of-Hudson and east-of-Hudson APEs and would be in line with the industrial character of the existing facilities. Consequently, no adverse indirect effects would be expected to affect architectural resources located in the west-of-Hudson and east-of-Hudson APEs. Further analysis of the potential for the project to result in direct or indirect effects would be undertaken at any future Tier II documentation.

In addition to construction-related activities and potential effects identified above, the Rail Tunnel with Truck Access Alternative would require the construction of a tunnel across New York Harbor and associated tunnel structures, such as tunnel portals and ventilation shafts. The portal in New Jersey would be located to the south of the Greenville Yard. The construction of the tunnel near Greenville Yard, within the west-of-Hudson APE, would have a physical effect on the Greenville Yard Historic District, since the tunnel construction would be located within the historic district boundaries. As mentioned previously, the Greenville Yard Lift Bridge has been demolished and therefore, no adverse effects from ground-borne construction-period vibrations on this architectural resource would occur. Within the east-of-Hudson APE, construction of the tunnel and tunnel portal would take place far below ground and no vibration effects would be expected to adversely affect the architectural resources within the east-of-Hudson APE. Further analysis of the potential for the project to result in direct or indirect effects should be undertaken at any future Tier II documentation.

Archaeological Resources

West-of-Hudson APE

In addition to the potential effects identified above under the Waterborne Alternatives, portions of Greenville Yard that may be affected by the construction of this alternative were not analyzed in the 2001 Phase IA. A supplemental archaeological documentary study would likely be required to assess the archaeological sensitivity of this area. Consultation with NJHPO would be undertaken as part of any future Tier II documentation. In addition to the potential effects identified above under the Waterborne Alternatives, the New Jersey portion of the tunnel alignment may affect an area charted as potentially containing shipwrecks, located off Greenville Yard. It is also possible that uncharted shipwrecks may be located in this area. Potential effects depend on the exact alignment of the Rail Tunnel Alternatives and tunnel construction technology. Once detailed design is available and the specific area of potential effect is defined, additional investigations may be undertaken in consultation with New York and New Jersey SHPOs.

East-of-Hudson APE

As discussed for the Rail Tunnel Alternative, the Phase IA Study concluded that a portion of the area studied was sensitive for late 19th century industrial or transportation-related archaeological resources. If project-related construction were to occur in the sensitive area, Phase IB

archaeological testing would be recommended in order to confirm the presence or absence of archaeological resources in the APE. Furthermore, a supplemental archaeological documentary study would likely be required to assess the archaeological sensitivity of the portion of 65th Street Yard not subject to previous study. Therefore, NYSHPO would be consulted as part of any Tier II analysis conducted in the future.

As part of this alternative, truck access to and from Linden Boulevard would be provided in East New York Yard. As mentioned throughout, and as described below, East New York Yard has not yet been analyzed for potential archaeological sensitivity and archaeological documentary study would be required in any Tier II documentation to begin evaluating potential impacts on this portion of the APE.

Fresh Pond Yard in Queens was evaluated in 2000 for a prior project. The APE was determined to have no prehistoric or historic period archaeological sensitivity based on soil borings and prior site disturbance. NYSHPO concurred with these findings. Therefore, project-related construction activities would not affect archaeological resources in Fresh Pond Yard.

The Phase IA conducted for Maspeth Yard in 2002, as part of the 2004 DEIS, concluded that the majority of the APE is sensitive for historic and prehistoric period archaeological resources. The only portion of the APE that was determined to lack sensitivity was the Phelps Dodge site, which occupies portions of Blocks 2529 and 2554 and is encompassed within the current project APE. The area most likely to contain intact archaeological deposits is the southeastern portion of Block 2575, located north of Maspeth Avenue and west of Rust Road, a portion of which is included in the current project APE. This area was historically characterized by a rise in topography and therefore may have hosted Native American habitation. The same area was the location of the Way-Mott Farmstead, the circa 1819 Garritt Furman Mansion, and the Way-Mott Cemetery. Thirteen burials were reportedly moved from the Way-Mott Cemetery to Prospect Park in 1950. The Phase IA Assessment recommended that Phase IB archaeological testing be performed in this area to determine the presence or absence of archaeological resources associated with the Native American habitation of Maspeth, the Way-Mott Farmstead, the Garritt Furman Mansion, and the Way-Mott Cemetery.

Other portions of the study area have not yet been analyzed for potential archaeological sensitivity. Any areas identified in archaeological documentary studies as being archaeologically sensitive that may be directly impacted by the proposed project would require further archaeological study (Phase IB field investigation) in order to determine the presence or absence of potentially significant (S/NR-eligible) archaeological resources. If any such Phase IB investigations result in the identification of potentially significant resources, a Phase II archaeological investigation would be required to determine their significance. If any unavoidable adverse effects to S/NR-eligible archaeological resources would occur as part of the proposed project, measures to minimize and/or mitigate these effects would be identified by the lead agency and the project sponsors in consultation with appropriate SHPOs, tribal organizations, and other consulting parties.

E. PRELIMINARY SECTION 4(F) EVALUATION

This chapter evaluates potential effects on Section 4(f) resources from the alternatives described in Chapter 4, “Alternatives.” The preliminary evaluation contained herein is conducted as appropriate for a Tier I EIS; a more detailed analysis will be conducted as part of any subsequent Tier II evaluations.

REGULATORY CONTEXT

Section 4(f) of the U.S. Department of Transportation (USDOT) Act of 1966 (49 USC §303) prohibits the Secretary of Transportation from approving any program or project that requires the "use" of (1) any publicly owned land in a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or (2) any land from a historic site of national, state, or local significance (collectively "Section 4(f) resources"), unless there is no feasible and prudent alternative to avoid the use of such land and the project includes all possible planning to minimize harm to the resource.

With respect to the term "use," the USDOT, considers three possible ways in which a project could involve a "use" of a resource, as defined in 23 CFR 774:

- When land is permanently incorporated into a transportation facility;
- When there is a temporary occupancy of land (such as during construction) that is adverse in terms of the statute's preservation purpose; or
- When there is a constructive use of land, resulting from proximity effects such as noise or visual effects which are so severe that they substantially impair the intended use of the Section 4(f) resource.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) amended Section 4(f) requirements to allow USDOT to approve certain minor uses of a Section 4(f) resource if it is determined that the use has no adverse effect on the protected resource. The criteria for such a determination are specified in Section 6009(a) of SAFETEA-LU. A *de minimis* determination can only be made on a resource-specific (not project-wide) basis, and only for permanent and temporary uses of a resource (not a constructive use).

For Tier I EISs, FHWA regulations implementing Section 4(f) acknowledge that "…when the first-tier, broad-scale EIS is prepared, the detailed information necessary to complete the Section 4(f) evaluation may not be available at that stage in the development of the action" (23 C.F.R. 774.7(e)). The regulations go on to state:

> *(1) In such cases, an evaluation should be made on the potential impacts that a proposed action will have on Section 4(f) land and whether those impacts could have a bearing on the decision to be made. A preliminary determination may be made at this time as to whether there are feasible and prudent locations or alternatives for the action to avoid the use of Section 4(f) land. This preliminary determination shall consider all possible planning to minimize harm to the extent that the level of detail available at the first-tier EIS stage allows. It is recognized that such planning at this stage will normally be limited to ensuring that opportunities to minimize harm at subsequent stages in the development process have not been precluded by decisions made at the first-tier stage. This preliminary determination is then incorporated into the first-tier EIS.*
>
> *(2) The Section 4(f) approval will be finalized in the second-tier study. If no new Section 4(f) use, other than a de minimis impact, is identified in the second-tier study and if all possible planning to minimize harm has occurred, then the second-tier Section 4(f) approval may finalize the preliminary approval by reference to the first-tier documentation. Re-evaluation of the preliminary Section 4(f) approval is only needed to the extent that new or more detailed information available at the second-tier stage raises new Section 4(f) concerns not already considered.*

(3) The final Section 4(f) approval may be made in the second-tier CE, EA, final EIS, ROD or FONSI.

IDENTIFICATION OF SECTION 4(F) RESOURCES

FHWA regulations implementing Section 4(f) state that for cultural resources, Section 4(f) applies only to those resources on or eligible for inclusion on the National Register of Historic Places (NR). Parklands (i.e., publicly owned parks, recreational areas, and wildlife and waterfowl refuges) are also eligible for protection under Section 4(f). Utilizing these criteria, this preliminary analysis relied on cultural resources identified in this chapter and parks identified in Chapters 6.1, "Land Use, Neighborhood Character, and Social Conditions," and 6.4, "Visual and Aesthetic Considerations," to compose the list of Section 4(f) resources.

CULTURAL RESOURCES

West-of-Hudson Study Area

There are twelve architectural resources in the west-of-Hudson (New Jersey) portion of the architectural resources APE between Oak Island South and Greenville Yard. One of these resources, the Morris Canal, is listed on the New Jersey and National Registers of Historic Places. The others have been determined eligible for S/NR listing. Of the architectural resources in the APE in New Jersey, eight are located within the boundaries of or adjacent to Oak Island and/or Greenville Yard. These resources include the Lehigh Valley Railroad Historic District, the Pennsylvania Railroad New York Bay Branch Historic District, the U.S. Routes 1 & 9 Historic District, the South Street Viaduct, the Central Railroad of New Jersey (Newark and Elizabeth Branch), the Lehigh Valley Railroad Oak Island Yard Historic District, the Greenville Yard Historic District, and Greenville Yard Piers.

A previously conducted Phase IA Archaeological Documentary Study identified the S/NR-listed Morris Canal in the vicinity of Greenville Yard as a sensitive historic-period archaeological resource.

East-of-Hudson Study Area

There are 41 known architectural resources in the east-of-Hudson (New York) portion of the Architectural Resources APE. Six of these are NYCLs, another two are NYCL-eligible; 12 are S/NR-listed, and 26 are S/NR-eligible.

Of the architectural resources in the APE in New York, two are located in the vicinity of project-related activities. These include the S/NR-listed and NYCL-eligible Brooklyn Army Terminal, located near 65th Street Yard in Brooklyn and the S/NR-eligible Bush Terminal Historic District, located near 51st Yard/Bush Terminal area in Brooklyn. In addition, the S/NR-eligible RFK/Triborough and Bronx Kill Bridges are within the Fremont Secondary Line corridor connecting Oak Point Yard and other points south via the Hell Gate Bridge.

No S/NR listed or eligible archeological resources have been identified in the New York study area at this time, and the only portion of the study area determined to be sensitive for historic and prehistoric period archaeological resources was near Maspeth Yard. While previously conducted Phase IA studies were used whenever possible for this Tier I EIS, a large portion of the study area is not covered by previous archaeological assessments which can help evaluate the archaeological sensitivity. However, many of the project's construction activities would take place in existing industrial or transportation related areas where substantial ground disturbance would have destroyed or disturbed any precontact or historic period archaeological deposits that

may have been present. Nonetheless, consultation with NYSHPO would be undertaken as part of any future Tier II documentation to identify potential resources with additional Phase IA studies performed as needed.

PARKLAND RESOURCES

West-of-Hudson Study Area

Parkland resources in the New Jersey study area are limited to Mercer County Park in Jersey City and Richard A. Rutkowski Park in Bayonne. Both parks have an active recreation component; Richard A. Rutkowski Park also includes a wetlands preserve and a bird sanctuary.

East-of-Hudson Study Area

As described extensively in Chapter 6.1, "Land Use, Neighborhood Character, and Social Conditions," there are numerous publicly owned parks and recreational facilities along the Brooklyn, Queens, and Bronx portions of the study area, comprising largely New York City Parks Department facilities. No wildlife and waterfowl refuges were identified in the New York City portion of the study area. A New York State conservation area is located within 1,000 feet of the Pilgrim Intermodal Terminal site in the Long Island portion of the study area.

POTENTIAL EFFECTS ON SECTION 4(F) RESOURCES

Since Tier I of the EIS does not include a conceptual design for the Build Alternatives that would allow a determination of precise areas of ground disturbance or other construction activity, potential temporary use of any of the aforementioned resources cannot be determined. Similarly, permanent uses from the operation of any of the project alternatives also cannot be determined without further engineering of the Build Alternatives. However, potential effects that may result from the proposed project are discussed below.

While some resources (e.g., the historic districts present in the west-of-Hudson APE) would be occupied by the construction and operation of the project alternatives, these resources derive their significance from a railroad-related context and would not experience adverse effects from the proposed project. Any increased train and float activity near these resources would be in line with the current and historic uses of the area and would not result in adverse effects on the resources. As discussed previously, the Morris Canal in the New Jersey study area was identified as the only known S/NR-listed or eligible resource than may be affected by the construction of the project alternatives. A small portion of the Morris Canal resource boundary intersects the Greenville Yard study area. While is not possible to determine a potential effect on this resource at this time without a detailed engineering design, it is not expected that the construction of the project alternatives would create a substantial effect on this resource that would constitute a permanent or temporary use of this resource under Section 4(f).

Most importantly, while a number of these Section 4(f) resources may experience adverse effects from the operation of the project alternatives, these effects would not be so severe as to substantially impair the use of any of the resources and would not constitute a constructive use of any resource. The majority of adverse effects from the operation of the project alternatives are expected to be indirect effects from increased operational noise and vibration. In-depth analysis of potential adverse operational effects to architectural resources would be undertaken at part of any future Tier II documentation, however at this time, adverse effects are not expected to be substantial enough to constitute a use of any of the resources in any of the project APEs.

F. TIER II ANALYSIS AND POTENTIAL MITIGATION MEASURES

As described above in "Methodology," more detailed existing conditions data collection and effects assessments would be conducted as part of any Tier II documentation for the proposed project in the future. As project design progresses, the project APE boundaries may be revised to account for changes in the proposed project. Any revisions to the APE would be undertaken in consultation with NYSHPO, NJHPO, NYCLPC, and involved THPOs and/or Tribal Organizations. Existing conditions data presented in this Tier I EIS would be revised to conform to any revised APEs. Additional existing conditions data that would be collected as part of the Tier II analysis would include potential architectural resources (resources that meet the criteria for listing on the S/NR and/or designation as NYCLs but have not been previously identified). Coordination under Section 106 would also be initiated at that time with NYSHPO/NJHPO and any consulting and interested parties. In terms of archaeological resources, archaeological documentary studies and field investigations (where appropriate) would be conducted in potentially sensitive portions of the archaeological APE in order to determine the presence or absence of potentially S/NR-eligible archaeological resources. For example, as mentioned previously, the area off Greenville Yard may contain shipwrecks that may be affected by the construction of the Rail Tunnel Alternatives. Cartographic research and/or remote testing may be employed to determine if shipwrecks are present. The potential for the project alternatives to affect historic properties would be evaluated.

If unavoidable potential direct and/or indirect adverse effects are identified during the Tier II analysis, measures to minimize and/or mitigate these effects would be identified in consultation with NYSHPO, NJHPO, NYCLPC, involved THPOs and/or tribal organizations, ACHP (if appropriate), and any involved Consulting Parties.

FUTURE SECTION 4(F) ANALYSIS

Since no use of Section 4(f) resources from any of the project alternatives can be determined at this time, neither alternatives to avoid the use of these properties nor measures to minimize harm to the resources can be identified. Any subsequent Tier II documentation of the project alternatives would include more detailed engineering design and environmental analysis which may disclose additional impacts on Section 4(f) resources. Each Section 4(f) resource in the study area would be examined in detail to determine whether a potential significant adverse effect may occur that creates a use of the resource under Section 4(f). At the same time, the ability to refine the engineering design of the project alternatives during Tier II analysis may also substantially minimize or avoid any impacts and therefore use under Section 4(f).

As described in the chapter above additional existing conditions data that would be collected as part of any subsequent Tier II analysis may include potential architectural resources (resources that meet the criteria for listing on the S/NR and/or designation as NYCLs but have not been previously identified). Archaeological documentary studies and field investigations conducted in potentially sensitive portions of the archaeological APE may also determine the presence (or absence) of potentially S/NR-eligible archaeological resources. These resources would be added to the list of Section 4(f) resources identified above and the potential for the use of these resources would be assessed in accordance with the appropriate procedures of Section 4(f). ✷